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SOUTHERN
TEXTILE BULLETIN

VOL. 32 CHARLOTTE, N. C., THURSDAY, AUGUST 18, 1927 NUMBER 25

Wearless, Dripless Mill Motors

In textile mills even more than in most industries, electric motor practices are a highly developed science. Naturally a strong preference exists for Timken-equipped motors. Their anti-friction properties reduce starting load and save all possible power, lubricant, and attention. They are drip-proof *in any position.* Mounted on ceiling, wall, or floor, no alterations are required for any form of drive, because on Timken Bearings all loads from all directions are carried equally well. Only Timken-made electric steel, Timken tapered construction, and Timken *POSITIVELY ALIGNED ROLLS* produce this higher all-around load capacity. It makes possible a 15% average reduction in shaft length, saves aisle space, and assures complete protection against thrust, shock, radial load, friction—and burn-outs.

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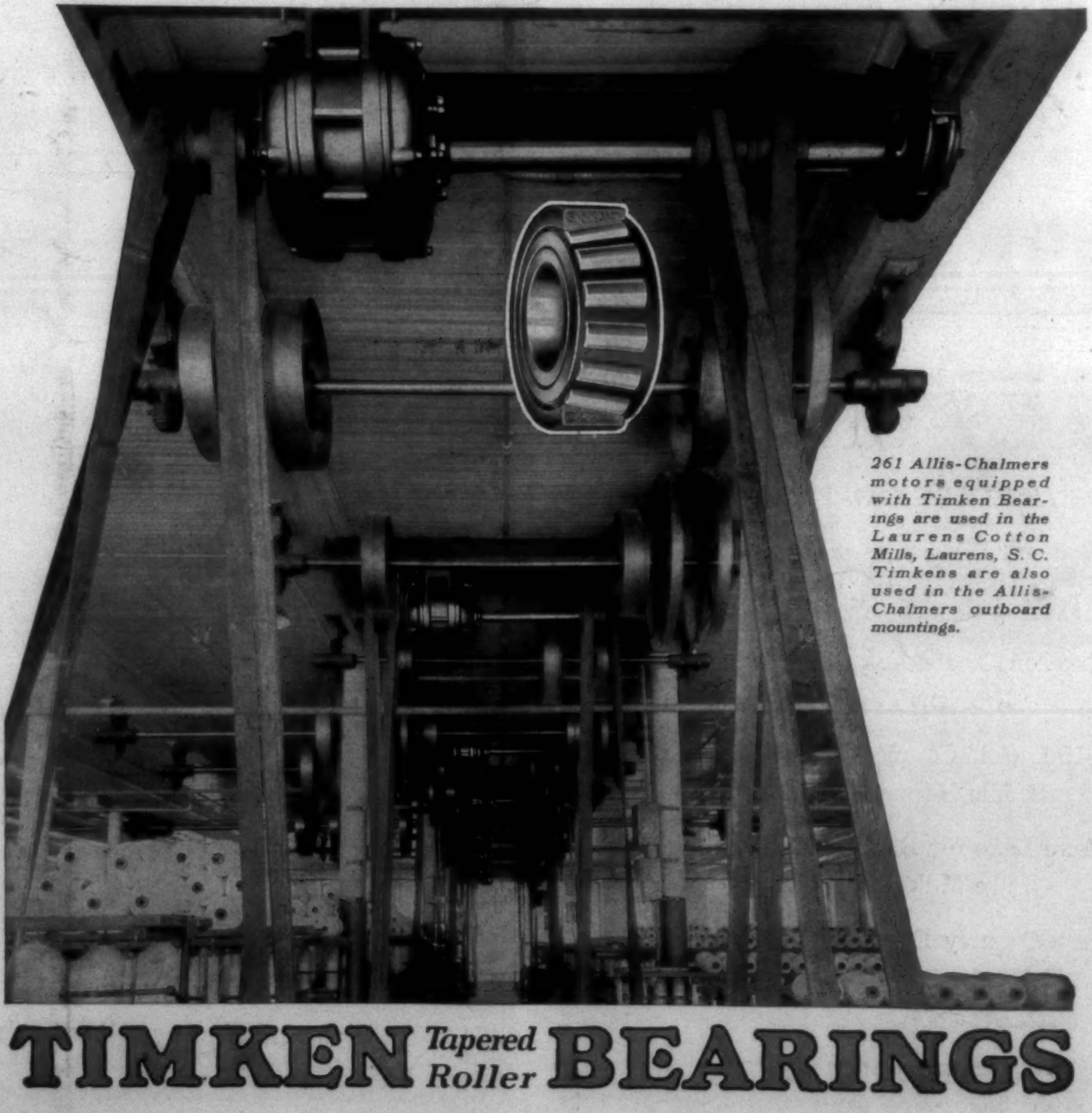

261 Allis-Chalmers motors equipped with Timken Bearings are used in the Laurens Cotton Mills, Laurens, S. C. Timkens are also used in the Allis-Chalmers outboard mountings.

TIMKEN *Tapered Roller* BEARINGS

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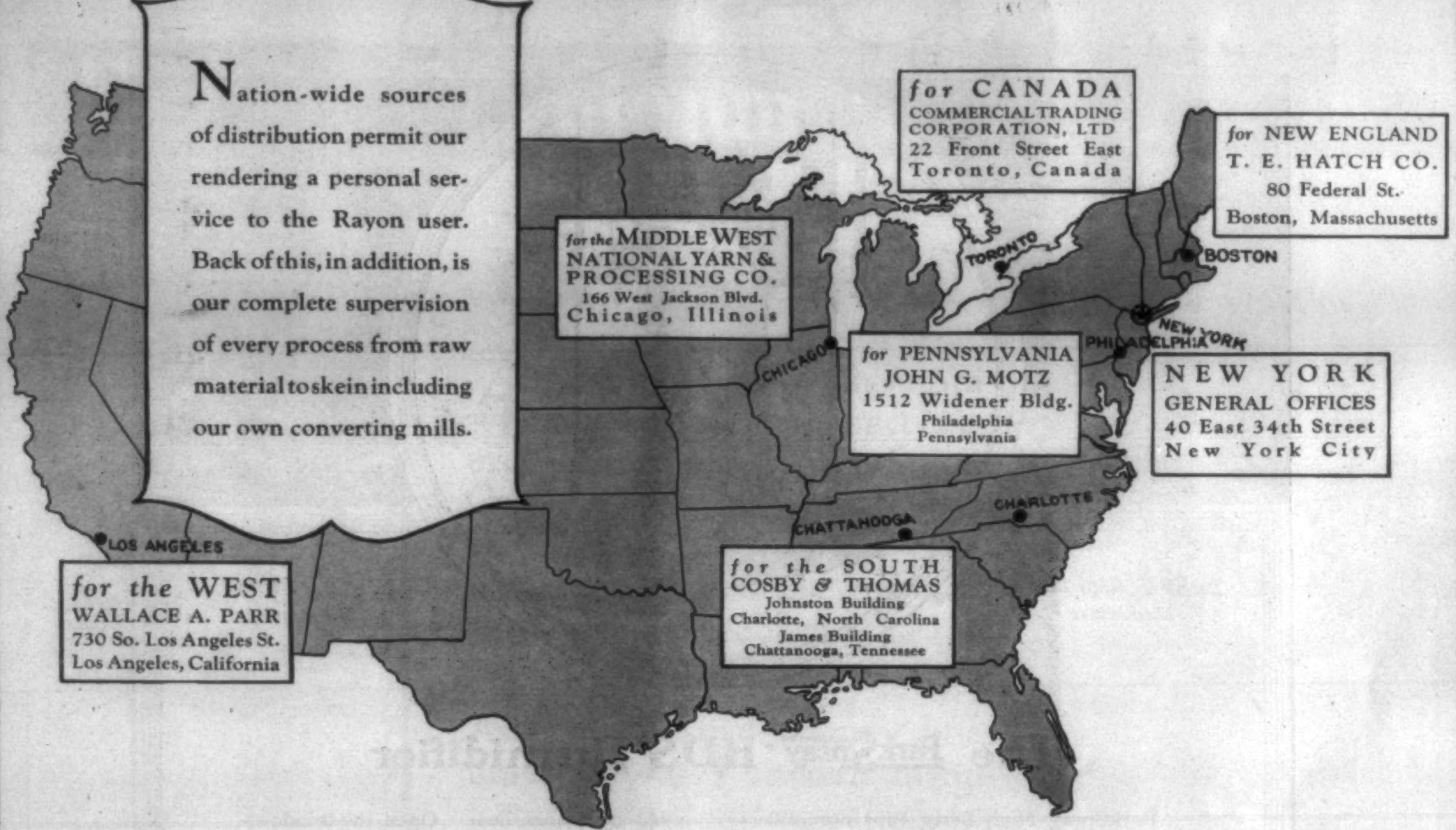

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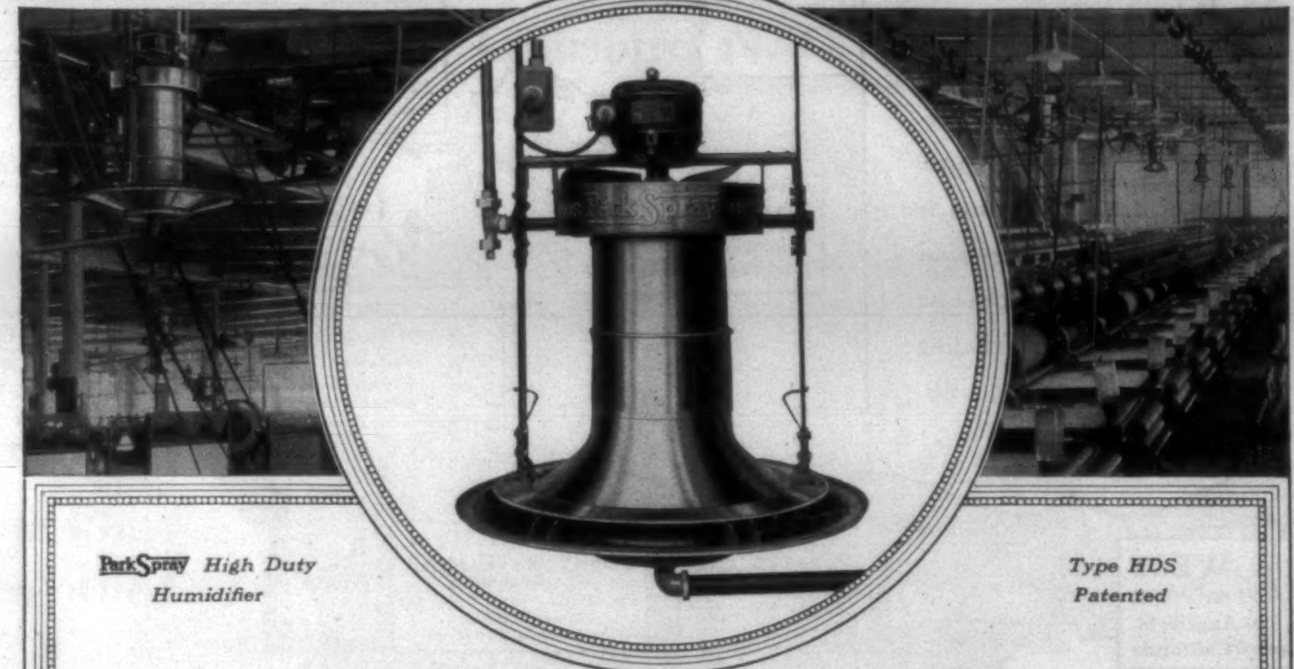

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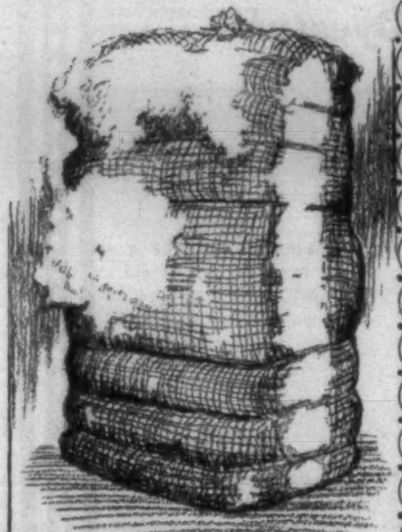

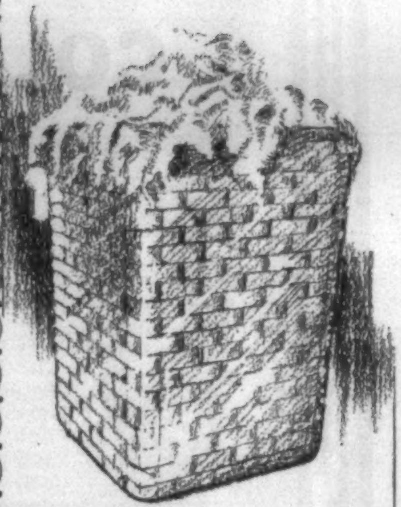

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SOUTHERN
TEXTILE BULLETIN

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VOL. 32 CHARLOTTE, N. C., THURSDAY, AUGUST 18, 1927 NUMBER 25

Cotton and Dyeing From a Chemist's Point of View

Address by Percy Bean, before British Association of Managers of Textile Works.

COTTON has apparently been known as a textile material for more than 4,000 years, and the Chinese claim to have manufactured cotton materials as early as 2300 B.C. Herodotus mentions cotton clothing in India in the year 445 B.C., and Pliny, writing in the first century, mentioned the use of cotton cloths in Egypt. Before the discovery of America, spinning, weaving and dyeing of cotton was carried out in Mexico, Brazil and Peru. In Europe, Spain was the first country to manufacture cotton goods, and was followed first by Holland and then by the English. Despite the long time that cotton has been used, and the enormous amount of work which has been carried out with regard to the constitution and properties of cotton, we have not yet explained satisfactorily many of the chemical and dyeing problems of the subject.

As you know, the cotton plant belongs to the mallow family, and it grows best in sub-tropical climates. There are many varieties, producing cotton fibres varying in staple-length, thickness, lustre, strength and other physical properties. The fibres are found attached to the seeds, and each one consists of a single elongated cell tapering to a point at one end. The cell is twisted throughout its length, and, under the microscope, has a ribbon-like appearance. The cell is made up an outer cuticle of cellulose, a thick wall built up of successive layers of ordinary cellulose, a dense inner cuticle of cellulose, and a cavity or lumen which contains the dry cell contents. The outer cuticle is much more resistant to chemical reagents than the cell wall, and its surface is marked by striations. The cell wall consists nearly 90 per cent of the cell, and the cellulose of which it is formed is fairly easily affected by reagents. Swelling agents such as Schweitzer's reagent, will cause this portion to swell and burst the cuticle.

The structure of cotton fibres varies considerably, mature fibres being well twisted and possessing thick walls and a clearly-defined lumen. Unripe or over-matured fibres possess comparatively little twist, and rather thin cell walls and indistinct lumen. What are known as dead fibres have extremely thin walls, little sign of lumen, and have the appearance of a flat, twisted tape.

Cotton fibres are subject, like other vegetables, to pests, frostbite, over and under ripeness, etc., and this affects their properties as textile materials. Crum pointed out that the condition of the fibres represented the age of the plant, and classified the mas green, half-ripe and ripe. The chemical behavior of dead cotton is different from that of normal fibres, as Schweitzer's reagent causes only a swelling of the fibre and the disappearance of the usual markings, considerable time being necessary to dissolve it. Dead fibres are non-luminous in polarized light, and have little affinity for dyestuffs. With basic dyestuffs on a tannin mordant, only the cell walls are colored. It is said that dead fibres appear to have a smaller affinity for dyestuffs owing to lesser optical thickness.

It appears that microscope examination shows the growth condition of cottons and gives a true classification of their value for textile purposes. It is suggested by some that cotton should be classified by growers according to its condition of growth as well as to its staple length. The weight ratio of seed to cotton also gives an indication of the growth condition. It might be possible to avoid some of the troubles found in mercerized, dyed or finished fabrics if this was done, as the growth condition shows in dyeing and chemical treatments of the fibers.

Unripe or dead fibres frequently occur in small bunches, known as neps, and these are found more commonly in fine than in coarse cottons. This leads to trouble in dyeing, since with direct colors the neps are dyed more deeply than ripe cotton. With indigo, alizarine, para red, etc., neps show as light spots or streaks, and they also give bad results in mercerized fabrics.

In addition to cellulose, cotton contains coloring matter, water, oil and wax, pectoses and pectins, proteins and other nitrogen compounds, organic acids and mineral matter. The proportion of cellulose is about 85 per cent, with about ½ per cent of oil and wax, 5 per cent of proteins, pectic substances and coloring matter, 1 per cent of mineral matter, and about 8 per cent of water.

The fatty constituents of cotton consists of glycerides, waxes, unsaponifiable oils, free fatty acids and traces of soaps. The amount of fatty matter which can be extracted from cotton depends upon the physical condition of the cotton as well as the solvent and temperature. The mechanical disintegration of cotton leads to an increase in the extract, and treatment with hydrochloric acid or heating with alkali between extractions also increases the yield. Such treatments probably make the fatty matter more accessible to the solvent. The treatment with hydrochloric acid removes a small quantity of magnesium, and it is thought that magnesium soaps must be present in the cotton.

Examination of extracts from cotton shows the presence of a number of complex monohydric alcohols, various fatty acids and hydrocarbons. The difficulty of saponifying the fatty matters is one of the chief troubles in bleaching, but their presence is essential for good spinning.

Several types of nitrogen compounds are present in cotton, including proteins, amino acids and nitrogen compounds associated with the coloring matters which are not removed, like the others, by means of alkalies.

The proteins play an important part in bleaching, for if they are not removed by scouring, the action of the bleaching solution converts them into chloramines, which decompose gradually and liberate hydrochloric acid. The action of enzymes or boiling alkali hydrolyses these compounds to amino acids.

Some of the coloring matter of cotton is due to the waxes, proteins, etc., but there is a certain amount which can only be removed by bleaching agents. Not much is known about the composition of this coloring matter except that it contains nitrogen.

The pectose matter has a similar empirical formula to that of cellulose, but it differs from cellulose in being soluble in alkali and insoluble in Schweitzer's reagent.

The nature and amount of mineral matter in cotton appears to vary with the composition of the soil in which it is grown. The exact nature of the mineral matter cannot be determined, because some of the bases are combined with organic acids and, on burning, they are converted to carbonates.

It has been shown that different cottons have characteristic phosphorous contents, and this fact can be used in some cases to distinguish one from another. For instance, Egyptian cotton contains almost twice as much phosphorus as American. Cotton ash is found to contain potassium carbonate, chloride and sulphate, calcium phosphate and carbonate, magnesium phosphate, iron oxide and alumina.

Cotton contains a small quantity of tannic acid, which probably exists in the form of a glucoside.

The cellulose of which cotton is mainly composed is a carbohydrate, and it belongs to the same group of compounds as sugars and starches. All kinds of cellulose have the same percentage composition, expressed by the formula $C^6H^{10}O^5$. The correct molecular weight is unknown, but it is known that it contains four hydroxyl groups, since a tetra-acetate may be prepared.

Cotton cellulose is not very reactive chemically, and is insoluble in water and organic sulphuric acid, and in Schweitzer's reagent, concentrated sulphuric acid, and in certain solutions of metallic salts, such as zinc chloride. It is also attacked by bacteria and enzymes. Although readily hydrolyzed by acids, it is comparatively resistant to alkalies.

The action of mineral acids and certain organic acids on cotton produces hydrocellulose. This causes tendering, and alters the dyeing properties of the cotton. Hydrocellulose reduces Fehling's solution, and is readily soluble in Schweitzer's reagent. It possesses an increased affinity for basic colors, and thus causes faults in dyeing.

Oxycellulose is due to the oxidizing action of various reagents such as chlorine, or by acids and alkalies in the presence of air. Great care has to be taken in bleaching cotton to avoid the production of oxycellulose, because it tenders the cotton and changes its dyeing properties, since it resists direct dyestuffs and has an increased affinity for basic colors. Like hydrocellulose, it is a strong reducing agent, and this fact is used as a means of quantitively estimating the amount of oxycellulose in a fabric.

Dry heat gradually produces oxycellulose, and moist heat will produce hydrocellulose. Air, particularly in the presence of sunlight, has a similar effect to dry heat.

Cold water causes cotton to swell and lose some of its natural twist, but has no chemical action on the fibre, the twist reappearing on drying. Hot water causes a certain amount of shrinkage, accompanied by a small decrease of tensile strength.

Bacteria and moulds are often the cause of damage in cotton. Micro-organisms are always found in cotton, and these will attack it if it contains more than about 9 per cent of moisture.

An interesting test was made by Fleming and Thaysen, who incubated good Indian cotton which contained 1.4 million bacteria per gramme for three days in the presence of 6, 7, 8 and 9 per cent of moisture without change. With 10, 15, 20 and 50 per cent, the numbers increased respectively to 124,000,000, 499,000,000, 1,112,000,000 and 9,040,000,000. Fibres damaged by the bacteria show different swelling properties from those of normal cotton, by which means the extent of damage may be estimated. Immersion in sea water causes decomposition within thre weeks, owing to the action of bacteria. Different cottons vary in their resistance to bacterial and enzyme action; American being less susceptible than India, and Egyptian lying between the two.

While acids have a tendering action on cotton, alkalies, except under certain conditions, have no tendering action. In the presence of air, hot alkalies gradually produce oxycellulose, but in the absence of air cotton may be boiled under pressure with caustic soda without damage.

The action of caustic soda on cotton has been of great importance since Mercer's observations in 1814. Mercer found that strong solutions of caustic soda caused cotton fibres to swell and decrease in lengths. After removal of alkali by washing, or acid, an increased absorption of dyestuffs was found. Lowe observed that if the cotton was treated under tension it had a much greater lustre than ordinary cotton.

Cotton is affected by all strengths of caustic soda solutions, but it is not decomposed by even very strong solutions. A considerable amount of research has been carried out on the effects of mercerization upon the strength, lustre, dyeing and other properties of cotton, but the chemistry of the process is not yet understood thoroughly. It has not yet been proved whether the caustic soda combines chemically with the cellulose or whether it is merely a physical phenomenon. Mercer was of the opinion that chemical combination took place and that the resulting compound could be decomposed by water. Gladstone appears to have found evidence of the existence of compounds of the formulæ $(C^6H^{10}O^5)^2$, NaOH and $(C^6H^{10}O^5)^2$ KOH. His results were confirmed by Viewig, who found some indication of compounds of the formulæ $(C^6H^{10}O^5)^2$ 2NaOH and $(C^6H^{10}O^5)^2$ NaOH. Miller later found that except in very weak or very strong solutions the alkali absorbed by the cotton varied in proportion to the concentration of the solution, and no chemical union appeared to take place. His views have been supported by many others. Coward and Spencer treated cotton with caustic soda and centrifuged it at a very high speed so that the alkali left would be that combined chemically with the cotton. The residues were titrated and weighed to determine the quantities of alkali retained, but no indication of chemical compounds was obtained. From the formation of cellulose xanthatis similar bodies, apparent evidence is obtained in support of the chemical combination with alkali. Recently, Viewig formed the opinion that with solutions of caustic soda of 15 grams to 35 grams 100cc. cotton forms a compound with the formulæ $(C^6H^{10}O^5)^2$ NaOH, and above 40 grams 100 cc. it forms a compound with the formula $(C^6H^{10}O^5)^2$ 2NaOH. These results have been confirmed by Heuser. From the mass of evidence available on the subject, it seems that cotton is capable of combining chemically with caustic soda.

With regard to the dyeing properties of mercerized cotton, a considerable amount of work has been done, but the reasons for the greater absorption of dyestuffs compared with that of ordinary cotton are not definitely proved.

Dyeing of Cotton.

Cotton has comparatively little affinity for most dyestuffs, and this is an indication of the chemical inertness of cellulose. The dyestuffs which are applied to cotton are the direct cotton colors, basic colors on a mordant, a number of mordant colors, sulphur and vat colors, and a number of colors which are actually made on the fibre.

At first sight it does not appear remarkable that a highly-colored solution of a dyestuff should impart afairly permanent color to textile fibres. It is, however, by no means every colored solution which posseses this property, as many will only stain fibres so that the color is readily removed by washing with water. In order to dye the fibre properly, the dyestuff must be retained either in chemical combination or in a different physical condition. In order that this may occur, the molecule of the dyestuff must be comparatively complex, but complexity alone is not sufficient, for many complex compounds are colorless.

Many colorless organic compounds become colored by the introduction of what is known as a chromophor group, such as the ao group, nitro group and nitroso group. A molecule containing a chromophor is known as chromogen, but a chromogen is not necessarily a dyestuff, although it is disposed to become one under suitable conditions. In order to become a dyestuff, another group, know nas an auxichromo, must be introduced. Such include hydroxyl, amino, substituted amino and sulphonic acid groups.

The processes by which dyestuffs become fixed on the fibre are not yet understood thoroughly. An enormous amount of research has been carried out on the subject and many theories have been advanced. The main theories are the mechanical, colloidal and electro-chemical theories.

It was first supposed that in a hot solution of a dyestuff the fibres swelled and allowed the particles of dyestuff to enter the enlarged pores, and that, on cooling, the pores contracted and prevented the removal of the dyestuff. If this was the case, then one would expect that washing in hot water would again expand the pores and allow the dyestuff to escape. The difference in dyeing properties of various fibres has also been explained on the assumption that different fibres have different sies of pores, and different classes of dyes have different sized particles, so that some fibres are able to absorb one dyestuff and not another.

It seems unlikely that the dyeing of a piece of wool or cotton can be explained on a mechanical basis, but there are certain cases where the fibre does not appear to act in a mechanical manner. Support is apparently given to the mechanical theory by the fact that no definite chemical compound of a dyestuff and a fibre has actually been shown to be produced by a dyeing process, and on the fact that dyes on the fibre retain many of their original properties. The rubbing off and sublimation of colors is also held to suport the theory. The forces of adhesion and capillary attraction are used as arguments in favor, but it is unlikely that all dyeing phenomena can be explained in this way.

We can safely accept the mechanical theory in the case of the mineral colors and such colors as para red, which are actually produced on the fibre. One might suggest that this could be extended to the naphthol AS series of colors, which are produced like para red, but I think it would not be safe to do so, because these compounds have a direct affinity for cotton.

A second theory, which is well supported, is the chemical theory of dyeing. Bergmann advanced the idea that the process of dyeing is a purely chemical one, and that an interaction takes place between the dyestuff and the fibre. Animal fibres possess an amphoteric character which enables them to unit with either a basic or acidic compound to form a salt. Many experiments have been carried out, mainly with acid and basic dyestuffs on wool and silk, and these seem to inidicate that dyeing is a chemical phenomenon. As regards cotton, the fact that it is practically devoid of acid or basic properties seems to make it impossible for salt formation to take place with a dyestuff, and its comparative inertness towards dyestffs is thus accounted for. The reactions which regenerated and derived cellulose undergo have been advanced in support of the chemical theory with regard to cotton dyeing, and it is considered that the hydroxyl groups of cellulose play an important part in dyeing.

Vignon showed that although cotton has normally little or no affinity for acid dyes, when heated in sealed tubes with ammonia its properties are modified, and that it will dye with acid colors. Similarly, mercerized cotton possesses slightly basic properties, and attracts acid dyestuffs as well as having an increased affinity for direct colors.

Another theory is that a substance when added to two non-miscible solvents, it will divide itself between the two in proportion to its solubility in each. In the case of cotton-dyeing the solvents are cotton and water. The addition of substances which reduce the solubility of the dyestuff in water will cause more color to dissolve in the fibre, until an equilibrium condition is reached. This does not appear to explain the matter fully because one would expect such a dyed fibre when placed in a large bulk of water, to lose most of its color in order to attain a new equilibrium between the solvents. An additional explanation of how the dyestuff is retained by the fibre is required.

You know that charcoal is capable of removing from solutions various gases, acids, salts and coloring matters. Since animal and vegetable fibres resemble it in the large surface they expose, an absorption theory of dyeing has been put forward. This is not a chemical theory, since the absorbed compound is supposed to be retained on the surface of the absorping materials. This is considered by some to explain variations in fastness of dyestuffs. This theory is favored mainly in conjunction with other theories.

Cotton and other fibres appear to be colloidal in character, and many dyestuffs, particularly the direct cotton colors, also appear to be colloids. Various colloidal theories of dyeing is due to the formation of a gelatinous colloidal membrane, and that acid and basic dyes combine with the fibre to form such membranes. He considered that mordants also form membranes with fibres and then combine with dyes, and that direct dyes are also coagulated on the fibre. Dreaper argues that dyeing is entirely a colloidal phenomenon, and that the function of assistants is to increase the state of aggregation of the dyestuff. Dyeing may be a result of the mutual precipitating action of the colloidal fibre and dyestuff or the fibre may absorb the dye. It is suggested that the action of a mordant, which is generally a colloid, would be to increase the precipitating action of the fibre, or to act as a surface for precipitation.

Another theory which is well supported is the electro-chemical theory. The state of a dyestuff is changed when it dissolves in water, and it dissociates into electrically-charged ions, some carrying positive and some negative charges. Textile fibres, when immersed in water or a neutral solution of a dyestuff, become negatively charged. They will naturally attract the ions carrying a charge opposite to their own, and the two particles are charged, and neutralization of the charge causes precipitation.

No definite solution to the problem has been found yet, and there are many objections to all except the electrical theory. The manner in which the fibre gains its original charge is immaterial; it may be due

(Continued on Page 31)

E. F. HOUGHTON & CO.

ABOUT NUTS

Just comment on the various sort

by Chas. E. Carpenter,
Near Editor

ESTABLISHED 1865

The HOUGHTON LINE

WHENSOEVER a chap drops out of our organization and goes with a competitor, he is termed in our organization, "A HOUGHTON NUT." Meaning that he is merely a nut which has dropped off the HOUGHTON automobile, and is now functioning on another car.

Whensoever some one introduces a new invention to the HOUGHTON RESEARCH STAFF, he is called, "A NUT," because as a rule, all inventors are nutty on the subject of their own inventions. But that is no discredit to the inventor. Some folks are nutty on their wives and some on other fellow's wives—you never can tell. Some of us are nutty on our children and I am known to be nutty on my grandchildren. Some folks are nutty on religion and others on prohibition, and so it goes. We are all nuts, more or less.

If you will take the trouble to examine the files of the Patent Office, you will discover that there have been more nutty patents taken out than good ones, by fifty to one.

Therefore, no nutty invention is ever permitted to get by as a Houghton Product. We know the natural tendency of the inventor to be prejudiced in favor of his own invention and we do not permit the Company's customers, or the Company's reputation, to become the victim of such prejudice.

We will spend thousands of dollars for research to develop a new product and then thousands more to prove that it is no good and only after the product can make a proper defense is it permitted to be classed as a HOUGHTON PRODUCT, and passed along to our customers.

It took folks a long time to appreciate the quality of VIM LEATHER BELTING. That was a baby for which I was personally responsible, although I did not invent VIM LEATHER. VIM LEATHER was invented by the most successful leather manufacturer of all time, the revolutionizer of the manufacture of shoe leather. Unfortunately he died before seeing the success of VIM LEATHER BELTING fully developed. Although our Houghton Research Staff has somewhat improved the original VIM LEATHER I nevertheless give its great inventor full credit.

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The farmer who lazily, listless and laboriously followed the plough all day was in the same classification as the mule that dragged the implement. He wasted energy, time and money that could have been applied more advantageously to better purposes.

The present age has developed a closer relationship between brain actions and muscle activities.

Men—at least thinking men— now prefer to direct their efforts along lines of constructive thought rather than to actual physical labor—and it is right that they should.

Man is the only inventive animal, the only one of the animal kingdom whose brain possesses originality, and it is a crime against the human race to stultify and destroy that valuable and unique characteristic.

The man who prefers to accomplish a thing by means of his own physical acts instead of by machinery has not yet raised himself above the lower members of the animal family.

The prosperity of a nation advances with its increased employment of machinery.

The man who made the first wheelbarrow deserves a monument because of his advanced intelligence and his aid to humanity.

Every machine that does something which was previously accomplished only by hand has broken another link in the chain of man's bondage.

The first sewing machine was considered an instrument of Satan, but it proved to be the salvation of women.

Every new machine is looked upon with suspicion by those whose intelligence has not grown beyond their finger tips.

Doing things as father used to do them is a maxim not capable of general application—all of father's business correspondence was handwritten.

Machinery produces results more accurately, more regularly and more rapidly than they can be produced by hand—no matter how expert the operator may be.

This is the age of machines, but of machines intelligently controlled.

The dyer who still dyes his yarn upon sticks manipulated by hand, where machines can be employed, is the sort of a fellow who still uses quill toothpicks instead of a tooth brush.

There is scarcely an operation in the dyehouse, the finishing room, the bleachery or print shop that cannot be done better and cheaper by machinery than by hand, and yet there are still some antediluvian workmen who think they are not working unless they are thoroughly covered with dyestuffs or chemicals, and who believe that it is essential that they breathe steam-laden and fume-saturated atmospheres.

The most successful textile mills are those which are equipped not only with machinery but with modern machinery.

The efficiency of a man's hand manipulations soon reached its maximum, beyond which it could not go, but there is no limit to the efficiency possibility in machinery. Improvement follows improvement, and the successful dyer follows the improvements.

The value of a machine is no longer based upon its first cost but is estimated upon its cost saving and efficiency power.

A mill owner, naturally, hesitates to invest money in equipment but the hesitancy soon melts before the convincing proof of actual economy.

Production cost is the first element of business, and success or failure is based thereon.

The chemical branches of the textile industry are the only departments where products are bought to be added to the fiber — and hence costs are of the greatest importance there.

Proper mechanical equipment affects the cost of products in many ways.

It decreases the labor cost considerably and in these days, the labor expense is the largest in any industry.

It improves the quality of the results, and improved quality means a greater selling price and, hence, a greater profit.

It increases the output, thus affecting the overhead cost per unit.

It improves the working conditions, thus improving the mental attitude of the workmen, resulting in superior results.

Textile machinery is no longer simply a collection of coacting parts. The machine of today is a scientific device, constructed to do certain work in an economical and efficient manner. It is produced to meet cer-

(Continued on Page 34)

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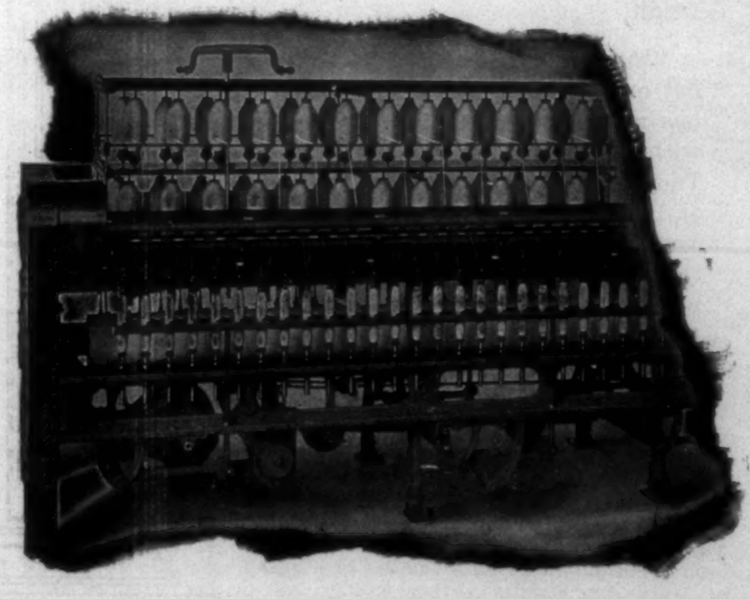

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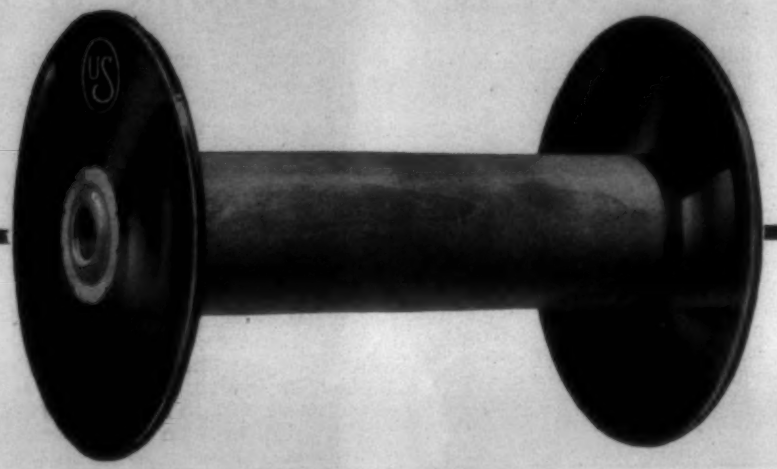

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Improving the Fastness to Kier Boiling of Vat Dyeing

IN an interesting article in Der Textil-chemiker and Colorist, by Zanker and Hartmann, of the Barmen School of Dyeing, references are made at length to the practice of topping fast dyeings with colors of another type with relatively less fastness, for the main purpose of matching to pattern. There is little to be said against this practice so long as the dyestuffs employed for topping the ground color to shade are chosen with due discrimination.

As a matter of fact, there are a few instances in which the topping instead of lessening the degree of fastness actually increases it.

Such an instance is embodied in the method freely adopted at one time of topping a ground color dyed with indigo on cotton, with logwood and salts of iron, copper or chrome, the resulting lake of logwood and metal fixed in the material acting as a protecting cover and so improving the fastness to rubbing and to washing. That was ,of course, an expedient of convenience, whereas nowadays with the increased use of the vat dyes, particularly the indanthrenes, with a view to meeting the popular demand for fast colors, any method likely to increase still further the fastness of these colors is worthy of consideration.

Judicious topping of vat dyeings for the purpose of matching to pattern is quite a rational course of procedure, but as practiced it serves only that one purpose, and fails to add to the fastness of the dyeing. There exists a real need of a satisfactory method of making dyeings with the vat dyes more generally fast than at present, to the somewhat severe operation of kier-boiling necessitated in the process of bleaching cotton fabrics containing colored effect threads dyed with these coloring matters. It has long since been established that any lack of fastness of the vat dyes to kier boiling is due in the main, to the reducing action during the operation exercised by the starch and the alkali present.

Attempts have been made to modify the nature of the kier boiling, but without very successful results in general. Perhaps the palliative measure proposed by the Hoedst works attracted most attention. It will be remembered that in this method it was proposed that the boiling out liquor should contain an addition of bromate of potash to a liquor containing 1.2 per cent of caustic soda an addition was to be made of 0.2 per cent to 0.5 per cent of bromate of potash on the weight of the material to be treated. This, and many other methods proposed, do not appear to have been accorded general adoption.

These general considerations of the subject lead up to the endeavor of the authors quoted, to devise a method based on the simpler way of arranging an appropriate combination of dyeings one on the other, or plainly, topping with the idea of attaining greater fastness especially to kier-boiling.

Iron buff, as a topping, seemed sufficiently attractive to the authors to encourage the investigation of its merits. Other metallic salts were, of course, also given consideration.

The production of iron buff on cotton is so simply accomplished, that even today it is regarded by many as a very cheap and effective method of dyeing. In effect, the cotton needs only to be impregnated with a solution of an iron salt and then dried, or, for a deeper shade, treated with an alkali before the dyeing. Numerous variations of the procedure are well known.

One relies on the use of the so-called basic "nitrate of iron," from 1 per cent to 10 per cent, followed by treatment with a 2 per cent to 3 per cent solution of soda. Others rely on ammonia or lime water as the fixing agent, and yet others a dilute solution of hypochlorite of soda or calcium. The depth of the resulting color may be increased by repeating the operations successfully.

In application to fabrics, the proper impregnation of the cotton by the solution of the iron salt is attained by means of padding, in place of simple immersion in the case of yarns, followed by fixation and washing in an open machine. Such are the principles involved in the production of iron buff in cotton.

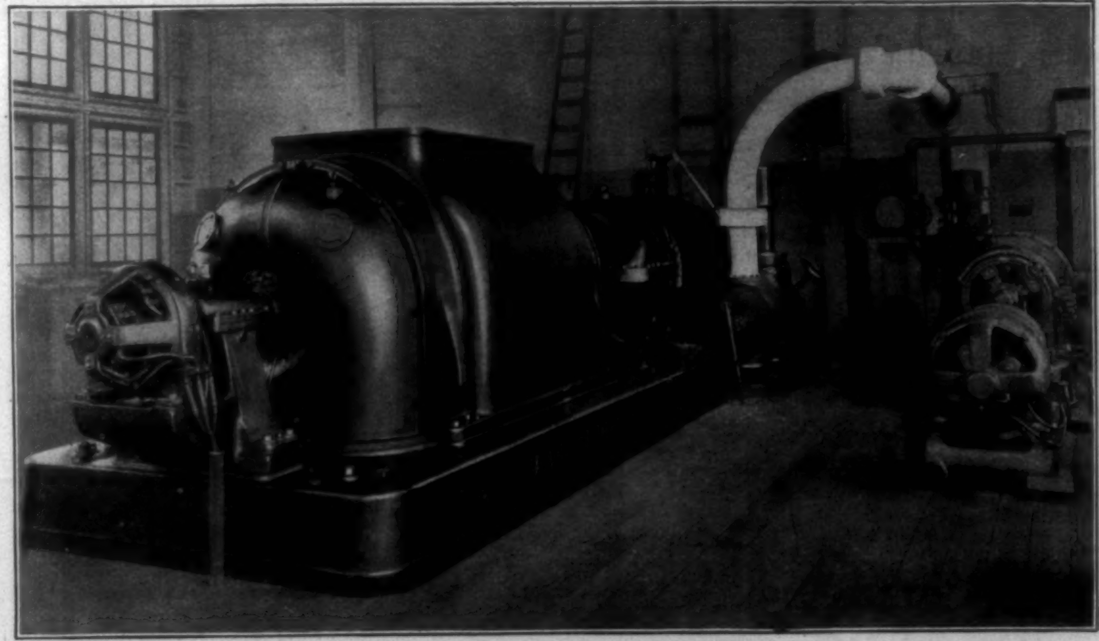
Practical considerations come, however, into view, since the precipitation of a metallic oxide on to the fibre, may result in some conditions in the imparting of what may be regarded in many circumstances as the undesirable factor, the production of a harsh handle.

This side of the subject has received in the past the attention it deserved, and attempts made to conduct the dyeing of cotton iron buff in such a manner that harshness should not be imparted to the material. Most textile colorists concerned with the application of mineral salts to cotton have solved this phase of the matter to their own satisfaction. There are more ways than one available to the investigator, but one published nearly 40 years ago by Lange, affords an instance of the right line to pursue.

Lange was concerned with the dyeing of iron buff in cotton yarn.

The yarn previously bleached was thoroughly impregnated with a cold, strong solution of acetate of iron, squeezed well, and allowed to hang in the air for an hour, then washed with water, soaped near the boil, and washed. This method depended greatly on the preparation of the acetate of iron. Lange prepared the solution by adding a solution of lead

(Continued on Page 32)



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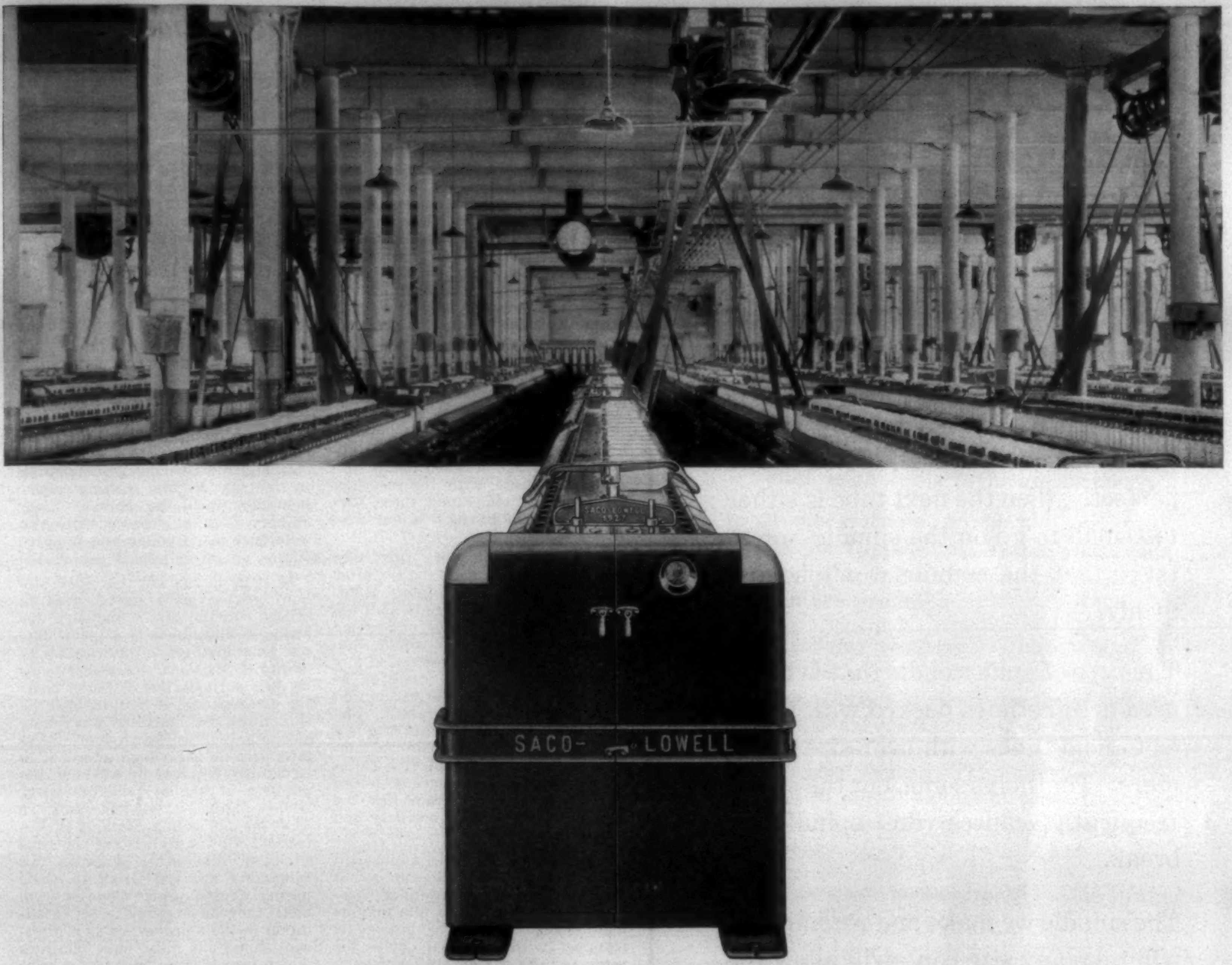

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Solves Another Problem

If you are weaving off paper tubes or cops, you have probably experienced considerable trouble caused by the variation in the diameter of the tubes. Your spindles hold one tube perfectly, then the next tube is either too small to go on the spindle—or so large that the spindle won't hold it firmly.

The type of split spindle that is being used is sometimes packed with leather to hold tubes with over-size diameters. This helps some, but the strain frequently causes the spindle to break.

The spindle we make and recommend will take any size cop—will allow for all variations, and because of its construction, does not injure the tubes—they can be used over and over again.

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Economy in Lubrication

Lubrication is a dominant factor in all industry, where machinery is calledupon to play a prominent part. Time may change this, and at some date in the distant future bearings may be developed which shall not require lubrication, in the present sense of the word. At present, however, lubrication is a necessary evil that proves to be an expensive one if certains facts are not recognized.

In general, the function of a lubricant is to prevent contact of two surfaces moving relative to each other. In order to function properly and economically, there are certain things which a lubricant must be capable of doing.

Primarily, a lubricant must be capable of maintaining a film between the moving parts. If, due to excessive loads, etc., this film is destroyed, contact between metal surfaces will ensue, with the resulting friction and wear upon these surfaces. So film strength is our first consideration.

The generation of this film strength and its maintenance after formation, merit the utmost attention. There are numerous methods of arriving at the same end—some good, some bad, some indifferent. The basic principle, however, of any method of application, requires, as fore stated, that the lubrication film be formed and maintained. The method of formation of the film is a mechanical feature. The maintenance of the film, however, is closely allied with the internal structure of the lubricant. Herein lies the difference between an ordinary and a quality oil.

As a concrete example, a lubricant which has a tendency to run out of a bearing, requires constant replacement, in order that the film may be maintained. Unless the bearing is equipped with a special device for returning the excess lubricant to it, this excess is a total loss, and usually such a device is in itself, prohibitive, because of initial cost.

The obvious remedy, therefore, is to use an efficient lubricant which will "stay put" in the bearing. The economies effected by the use of lubricant are several.

As the quality lubricant does not run out to any extent, very little replacement is needed. Ring oilers, etc., require less frequent filling. The rate of supply from sight feed, mechanical devices, etc., can be materially reduced. Where hand oiling is practiced, fewer applications are necessary, thus affecting a saving not only in lubricant cost, but labor cost also.

A machine, oiled with an ordinary lubricant, usually suffers from a lack of oil, and not from infrequent oiling, as is generally supposed. Even though operators or oilers give the machinery regular attention, the bearing will be without the lubricant in a very short time unless the oil applied is an efficient oil, and has qualities within itself which give assurance of its staying where it is placed. An ordinary lubricant will run out almost as soon as applied. A very common sight is a machine fairly dripping oil and yet the bearings becoming loose and the machine wearing itself out. Certainly the appearance of the machine and the surroundings, are evidence of chine wearing itself out. Certainly the apeparance of the machine and the surroundings, are evidence of the fact, that the machine is receiving frequent attention, in this matter of oil. It is also evidence of the fact that frequent oiling will not solve the problem, if a poor lubricant be used. A quality lubricant does not need as frequent attention; and inspection shows that it is in a place where it gives service, and not dripping from the outside of bearings. The economy is obvious.

When a lubricant leaves the bearing, it must perforce go somewhere else, and it shows no discrimination in seeking a final resting place. Whether upon the operator, machinery, floor, or product, makes no difference in its young and ill-spent life.

In some industries, this phenomenon creates more havoc than in others. In the textile industry, for example, cleanliness is a prime factor. Even high grade lubricants with ability to stay put, are bound to be thrown at times, due to faulty bearing construction, if nothing else. If this lubricant finds its ways onto the coth, it ruins the product, unless it is of a nature which allows it to be readily removed by washing. Regardless of quality, whether good, bad, or indifferent, all lubricants are alike insofar as final staining is concerned. But as all oils are not alike in their lubricating qualities, all lubricants are not alike in their property resistance to removal from cloth they have stained. So, in addition to their properties as a lubricant, some oils must have qualities which render them harmless insofar as leaving a stain which cannot be eliminated. Oils which have this quality are the so-called stainless oils.

For best results a lubricant with a constantly maintained oil film, should show a minimum resistance to motion. Most first-class lubricants capable of maintaining a film will show approximately the same minimum resistance to motion, if they are given a comparative test.

In a majority of, if not all, industries using machinery, the maintenance and replacement costs far exceed the lubrication costs. A not uncommon ratio is 20 to 1. And yet, a possible increase of a few per cent in cost of lubricants which will cut the cost of maintenance is usually looked upon with horror, and to say the least, deemed inadvisable. The "penny saved and dollar wasted" policy dominates.

To briefly review the points stressed, a lubricant which will stay put will show the following advantages:

1 Reduce the actual cost of lubricants over a given period.

(Continued on Page 31)

Visiting Europe

By David Clark

(Continued from last week)

On Saturday, July 25th, we moved from the Royal Palace Hotel at Kensington Gardens, London, to the Regent Palace Hotel, which is located on Picadilly Circus, in the center of London.

Rates at the Regent Palace Hotel were very reasonable, being only $2.25 per day, which price included breakfast and tips.

London, like all of the old cities of the old world, has many crooked and winding streets and very few straight ones.

The streets are not, however, as crooked and winding as those of Boston, Mass.; in fact, there is little doubt that Boston has the worst streets in the world.

There are no street cars in London except in the suburbs, but there is a never ending line of busses, most of which are painted red.

When you look down a street there are busses as far as you can see. Every bus has a number which indicates the route that it follows, and those who use the busses simply wait until the right number comes along.

Some people ride inside the busses while others ride on top, and they seemed to be always filled. When I was in London twenty-five years previously I spent most of my time riding on top of busses and looking at the people. I preferred that to sight-seeing.

In London, as in all of England, vehicles drive on the left hand side of the road and it looked funny to see them driving on what we call the "wrong" side.

When people do things different from the manner to which we have been accustomed we are prone to say that they are wrong, but such is by no means logical.

In this connection I am reminded of the story of an American who, seeing a Chinaman placing cake and wine upon the grave of his father, facetiously remarked, "How long will it be before your father comes up to eat the cake and drink the wine?"

Looking at him the Chinaman replied, "About the same time your father comes up to smell the flowers you put on his grave."

Because we are accustomed to putting flowers upon graves we think that it is proper, but it is only a sentiment, and there is no more reason for doing so than putting on cake and wine as they do in China.

We do not like to see busses and automobiles drive on the left hand side of the road, but it is not for us to say that it is wrong.

During the week I spent at the convention of Rotary International at Ostend, which was attended by men from 38 nations, I came in contact with many people from other countries and I learned to have a great respect for habits and customs of others.

We used to moralize and wonder how in certain countries of Africa women could go about with so few clothes, but now our flappers and in some cases our grandmas don't wear any more than the women we criticised, and as it is the custom and the fashion, we say that it is all right.

If things keep progressing the women of Africa will soon have cause to criticise the nudity of America.

The nations of the world differ in habits and customs and it is not for the people of any one nation to be too critical of the customs and habits of other nations.

In good society in England you hold your fork in the left hand with the prongs down and push your food on the fork with your knife, which is held in the right hand, but I could not manipulate my knife and fork that way and I guess some of those with whom I ate thought I was a "rube."

All of this is in the way of a plea for consideration to be given to the customs of others.

On Saturday at noon I went to the Cecil Hatel to attend a meeting of the Rotary Club of London, but on the way stopped at the Savoy Hotel and had the pleasure of meeting Tilden, the great tennis player of America, who was then playing in the International matches at Wimbledon, where he suffered the worse defeat in his career.

The Rotary Club of London meets once per week, on Wednesday, but on account of the large number of American Rotarians passing through London on their way home from the Ostend convention, they held lunches every day during June and July.

About six London men were present at each lunch to welcome the visitors and there were usually twenty-five or more visitors from the United States or Canada.

Members of the Rotary Club of London told me that people had the idea that Englishmen were cold and inhospitable and that they wanted to prove that such was not the case and they certainly proved it to my satisfaction.

Englishmen have a certain reserve that is characteristic of them as a race, but underneath that reserve they are good fellows and good mixers.

Most of us in America are of English, Scotch or Irish stock and while the "Melting pot of Nations" has removed our reserve most of us still have an admiration for the staunch race of men from whom we sprang.

The English are a fine race of men and they have played a leading part in making the history of the world and no people have a higher regard for their financial obligations, private or Governmental.

During the lunch at the Cecil Hotel I met a number of the members of the Rotary Club of London and enjoyed talking to them and there were also quite a number of Americans and Canadians present, some of whom I had met on the boat or at Ostend.

It is very seldom that I do any

(Continued on Page 30)

Good Business

ONE small town in Piedmont Carolinas reports the following new industries that have located there within the last twelve months:

A veneer manufacturer. Utilizes hardwoods from near-by forests and supplies neighboring furniture factories.

A manufacturer of knitted underwear. Ample supplies of cotton yarns and teachable labor combine to make this venture profitable.

A canning company. Concentrates on berries, string beans and sweet potatoes. There is room for three or four additional plants in this community.

A chair factory. This industry utilizes skilled labor trained in other factories nearby and turns out a special line of goods.

A garment manufacturer. Due to the fact that the older industries established here are large employers of men, there is a surplus of female labor which offers opportunities to the knitting and cutting-up trades.

Every one of these new industries is running full time, employing full forces and enjoying the prosperity that marks the whole Piedmont Carolinas section.

What special advantages are there for *your* company? Why not get the facts? *Our Industrial Department will gladly supply any information you may need. Investigate. Write to Room 1105B Mercantile Building, Charlotte, N. C.*

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Practical Discussions By Practical Men

The Practical Discussion Department of the Southern Textile Bulletin is open to all readers whether they are interested in seeking information on technical questions or are willing to help "the other fellow" who has experienced trouble in some phase of his work.

The questions and answers are from practical men and have often proved extremely valuable in giving help when it was urgently needed.

The interchange of ideas between superintendents and overseers develops a great deal of worth while information that results in much practical benefit to the men who are concerned with similar problems.

You are invited to make free use of this department and to join in discussing various problems that are mentioned from week to week. Do not hesitate because you do not feel that you are an experienced writer. We will take care of that part of it.—Editor.

Inspection of Cloth.

Editor:

When inspecting cloth, which way is it best to have the cloth move on the cloth inspection machine?

Finisher.

Brushing Cloth on Both Sides.

Editor:

How can I make the cloth pass through an inspection machine, so that the cloth may be brushed on both sides without passing the cloth through a second time, separately and have the cloth move in the direction of the inspector.

Bill.

Licker-in Settings.

Editor:

Why are card licker-ins not set closer to the cylinder than is usually done. Is 10-1000 as near to the clinder as licker-in can be set and make good work? Carder.

Answer to Troubled.

Editor:

What makes a card throw out cotton from one or both sides of the Card? The cause of this is that cylinder screens are choked down with waste.

The screen must be freed from waste-filled interstices, and then be set right. There is also an adjustment which can be made between the card cylinder edges, and the flexible bend which will prevent the escapement of the lint ladened dust, also of good cotton.

Second Hand.

Answer to Chin.

Editor:

Answering "Chin" regarding good roll settings for card duplex cleaners. He does not mention the grade of cotton. But would say that as a basis to start the settings when using, say middling inch cotton and carding 600 pounds per week the four roll should be set 12-1000 of an inch to the licker-in and the back roll should be set 17-1000 of an inch to the licker-in. Carder.

Answer to Clothier.

Editor:

Clothier wants to know if heavy wire clothing would be better than the use of saw steel teeth as now used?

Would say that heavy wire clothing for card licker-ins was once extensively used, and it worked well when the clothing was new and in good shape. But the wires became easily bent. It was a hard job to keep the clothing in good working order. The wire would become hooked, and the licker-ins would become clogged. But for excellent carding, clean cotton, low production, and fine work, nothing can beat the wire clothing for card licker-ins.

Old Carder.

Answer to Anxious.

Editor:

Regarding the question by Anxious, who desires to know how to set card brushes so as to keep his cards top flats clean.

First, he must have good brushes. Second, he must be certain that the bands which drive these top flat revolving brushes are well made, and not less than ⅜ of an inch diameter and tight enough to prevent slipping. Now, the brushes should be set just deep enough into the top flats to sweep off the surplus fibres not taken off by the comb. If the brushes are set too deeply, they will pack the fibres further and deeper down into the top flat clothing and clog the clothing instead of cleaning the flats. Textile.

IF

If we had better laps, says the men at the cards, we could make better work and it wouldn't be so hard.

If the carding were only better, likewise says the drawing boy we could then please the bosses and work would be a joy.

If says the slubber tenders, our drawing they would only piece, we could run 95 per cent, and our troubles then would cease.

If says the speders girls, the slubbers would not make hard ends, we would fill up every bobbin, and have plenty dough to spend.

If says the spinning babies, we had less doublings and singlings too we would soon fill all the loom beams, and we'd not be in such a stew.

If says the Spooler Angels, the spinners would make fewer knots and gouts, we could make yarn to please the warper hands and with them not be at outs.

If says the warper tender, we had fewer tangled spools, we could make warps that would slash better and not break the supers rules.

If says the slasher devils, we didn't have so many haps and crosses, we could please the super and others, and not need so many bosses.

If we had better sized yarns says the lonely drawing-in guy, I could give those weavers warps with which they could run in high.

If shouts the weavers, we had less knots and misdraws, we'd feel better towards the world in general, even including our mother-in-laws.

If says the critical cloth inspectors all the weavers only knew ther stuff, the super wouldn't watch us near so closely, and not always seem so gruff.

If says our President, when about our goods the cutters kick, my super can't do this better, I'll fire him, and that damn quick.

If says the poor discouraged super there's a heaven for me beyond the skies, grieve not when there I am taken where I'll hear no alabies..—The Pace Maker of Geneva (Ala.) Cotton Mills.

New Heavy Belting Loom for Heavy Multiple Ply Narrow Fabrics

The loom is of the positive shuttle type of the so-called narrow fastened together by a sewing machine fabric loom and was designed to weave very heavy multiple ply fabrics up to about 12-inches wide; or, in other words, it is designed to handle the narrower width of the heavy work that, under ordinary conditions, could not be economically produced on the broad or fly shuttle looms. The loom has a total of 12 spaces and will weave goods up to four inches wide, and one-inch thick. The loom operates 96 picks per minute. It is 24 inches long and 9 inches wide over all.

This heavy work comprises such fabrics as the wide asbestos brake linings that are used on trucks, motor busses, hoisting engines and oil-well drilling machines, and also includes belts that are used for transmission of power and on conveyors.

This loom has a total capacity of 16 harnesses and can handle work up to seven-ply. This ply work might be compared to several pieces of cloth fastened together by sewing machine the main difference being that when the ply goods are formed on a loom, the binder thread is woven in and serves to fasten the several plies together.

The harness motion used on this loom is of the so-called closed shed type, or is constructed so that all of the harnesses come to a central position at each pick when the lay is on the front center and the reed is beating the filling thread into the cloth.

When the ply fabrics are woven on an ordinary open shed loom it is necessary to hold some of the harness frames either in an up or down position for several picks; and when this is done the takeup(which is constantly working) is drawing the threads through the harnesses, and by the friction between the threads and heddles causes the harness frames to pull forward and crowd against each other, causing serious complications in many cases. With the closed shed harness motion, at each pick the threads are in a straight line from the breast beam stand to the whip roll at the back of the loom, and this allows the threads to free themselves in the heddles and causes less trouble from the harness drawing forward.

The construction of the lay is also somewhat different from other looms which we have built. It is so arranged that the rack rod which operates the shuttles can be removed from the lay without disturbing the location of any of the shuttles, or without disturbing the driving connections which are connected to the shuttle motion. It is also arranged that the angle of the lay can be changed, so that adjustment can be made to have the shuttle pass through the yarn with the least possible friction, or so that the reed can be set at any desired angle when the same is beating the filling thread into the cloth.

The shuttle motion is also somewhat different from that on the ordinary loom, where wires and woven shuttle straps or leather straps are used to connect the driving rack rod with the shuttle motion. On this loom all of these connections are by steel chains and rods. This construction overcomes the rather serious trouble experienced on some looms from the stretching of the shuttle straps, and in overcoming the stretching the vibration is cut down to a considerable extent. In many cases this construction will allow for a considerable increase in the speed of the loom.

The takeup is arranged with an individual roll for each piece of goods. Each takeup drum has a set of differential gears to drive it, and with this construction it is possible for the operator to let back or take up any piece of goods on the loom without interfering with the others.

In the ordinary narrow fabric looms it has been customary to use wood for the breast beam and back girts, but in this particular loom no wood is used in the frame. This is constructed of cast iron loomsides and cross girts, held together by structural steel sections. — Loom Picking, by Crompton & Knowles Loom Works.

Textile Output Breaks Records in First Six Months

By A. W. Zelomek, Statistician, Fairchild Analytical Bureau, in Daily News Record.

FOR the past four years general business has expanded, but the textile industry has failed to reflect this. Previous years' studies also show the textile industry has not always moved as a unit.

During the first six months of 1927 there was record consumption of all textile fibres—cotton, wool, silk and rayon. The relative gain is indcated on the chart concluding this article. It shows that the textile production index, which is a weighted aggregate of cotton, wool, and silk reached in the first half of 1927 the highest level since the post-war depression. This index would have reached a still higher level if rayon figures had been included.

General Industry Off.

While the consumption of textile fibers increased general business actually declined. This is reflected in the building, automobile, lumber and iron ore industries.

The significance of the consump- comparison for the first six months tion figures is clearly indicated by of 1927 with 1926 or 1925. Cotton consumption for the first 6 months of 1927 not only exceeded the previous record of 1923 but also was the highest on record—3,803,992 bales, compared with 3,392,990 bales in 1926 and the previous high mark of 3,540,769 in 1923.

Silk consumption or takings also was of record proportions, exceeding of 1926 by 38,017 bales. The total for the first six months was 275,060 bales, compared with 237,043 in 1926.

Wool consumption, which had been declining steadily, registered first gain in several years, total consumption in pounds being 279,904,000, compared with 240,449,000 in 1926.

While accurate data regarding rayon consumption is not available, it is probable total consumption will exceed that of last year by at least 5,000,000 to 10,000,000 pounds. Total consumption has undoubtedly exceeded 35,000,000 pounds.

The high rate of general business activity and lower fiber prices are basically causes for the record consumption of cotton, wool, silk and rayon.

Regarding high rate of general business activity, it is necessary to bear in mind that for a number of years the textile industry failed to reflect the high rate of general business consumption of textile apparel commodities failed also to keep pace with consumption of such items as automobiles, radios and musical instruments. Lower prices have been one of the biggest factors in the increased consumption of textile fibers.

A comparison of the Fairchild Textile Production Index with the Fairchild Coposite Index since 1920 discloses the following:

During the years of low prices, textile production was on a high level, while the converse has been true in years of high prices. The chart shows that both textile production and textile fiber prices recovered from the post-war depression at about the same time, recovery in production being much more marked than the recovery in prices.

However, during the years of 1923-1924 while textile prices were at the highest, production was at the lowest. Since the peak of December, 1923, textile prices declined steadily until December, 1926, but have recovered since then.

In December, 1923, the Fairchild Composite Index registered the high total of 96.7, having recovered from the low point of 47.4 in 1921. The index declined steadily from December, 1923, to December, 1926, when it reached 51.1. As of the week ending July 29, 1927, the index had recovered and reached 5.2.

A study of the Fairchiid Textile Production Index for 1920 to date shows that the low point was reached in February, 1921, the index being 69.8. From 69.8 the index advanced until it reached 129.6 in January, 1923. From then on, it declined with slight upturns at intervals to 74.1 in June, 1924.

There was a recovery in the latter part of 1924 with the usual summer recessions during the years 1925-1926. The low point in 1925 was during the month of June, 106.9. The recovery was gradual from this low point until the high point of March, 1927—147.8.

While statements regarding profits for the first six months are not available for cotton, wool, silk and the aggregate profits of these four rayon industries, it is certain that industries will not equal the aggregate increase in production. Of the four industries, cotton and rayon companies have fared much better than the wool and silk.

In connection with silk, increased consumption has been largely due to increased takings by the knitting industry. It is doubtful if the total amount of fabrics consmued during the first six months equaled the total last year. Sales of men's apparel during the first six months decline 25 per cent under 1926.

The present outlook is for continued large consumption of cotton, wool, silk and rayon. However, it is doubtful if the ratio of increase recorded during the first six months

(Continued on Page 27)

The Right Reed for the Right Place

It is now generally accepted that the special Steel Heddle Rayon Reed is the only one capable of weaving rayon properly. This is due to the fact that the wire on the Rayon Reed differs from that on the regular reed. What holds for rayon holds for other yarns as well. A reed adapted to the thread being woven, can produce better results. At the same time it can not work injuries to itself by performing work unsuited to it.

Use of the right reed in the right place can make the difference between poor cloth and good cloth, between a broken, useless reed, and one ready to carry on indefinitely.

We are always glad to furnish samples on request.

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Improved Loom Reeds
Leno Reeds
Lease Reeds
Beamer Hecks
Combs

Winners of Second and Third Prizes

Contest Winners—12

As stated in our last issue W. K. Dry of Landis, N. C., won first prize in our contest on "The Fine Points of Carding," but there was no other decision as the following articles received one vote each:

Article No. 6	**1 vote**
Article No. 18	**1 vote**
Article No. 23	**1 vote**
Article No. 33	**1 vote**
Article No. 36	**1 vote**
Article No. 37	**1 vote**

We sent the six articles to the judges and asked them to make a decision relative to the best and second best among them.

One of the judges was in Oklahoma on a vacation, but the others reported as follows:

Judge No. 1.

Best—No. 37 (Romer).
Second Best—No. 6 (Corn Husker).

Judge No. 2.

Best—No. 37 (Romer).
Second Best—No. 23 (One of the Boys).

Judge No. 3.

Best—No. 37 (Romer).
Second Best—No. 23 (One of the Boys).

Judge No. 4.

Best—No. 6 (Corn Husker).
Second Best—No. 23 (One of the Boys).

Judge No. 5.

Best—No. 6 (Horn Husker).
Second Best—No. 33 (Southern).

Judge No. 6.

Best—No. 18 (Sambo).
Second Best—No. 37 (Romer).

Allowing 1 vote for "Best" and ½ vote for "Second Best," we find the following:

No. 37 (Romer)	**3½ votes**
No. 6 (Corn Husker)	**2½ votes**
No. 23 (One of the Boys)	**1½ votes**
No. 18 (Sambo)	**1 vote**
No. 33 (Southern)	**½ vote**

Substituting the names of the writers for their numbers and assumed names we have:

	Votes
I. K. Edwards, Rome, Ga.	**3½**
F. E. Latham, Rock Hill, S. C.	**2½**
L. K. Payne, Marion, N. C.	**1½**
A. E. Nance, Kannapolis, N. C.	**1**
E. L. Goble, West, Texas	**½**

The contest winners therefore were:

Winner of First Prize:
P. K. Dry,
Landis, N. C.
Winner of Second Prize:
I. K. Edwards,
Rome, Ga.
Winner of Third Prize:
F. E. Latham,
Rock Hill, S. C.

We have forwarded to the prize winners their checks for $25, $15 and $10.

In addition to the fortunate prize winners, the following are the names of those whose articles received votes of the judges:

L. K. Payne (No. 23), Marion, N. C.
A. E. Nance (No. 18), Kannapolis, N. C.
E. L. Goble (No. 33), West, Texas.
W. C. Hardy (No. 36), Berryton, Ga.
C. W. Baker (No. 1), Salisbury, N. C.
J. E. Carter (No. 5), Jacksonville, Ala.
B. P. Adams (No. 8), Lancaster, S. C.
G. W. Lehman (No. 12), Huntsville, Ala.
C. F. Campbell (No. 21), Statesville, N. C.

The following were given honorable mention by the judges:

C. W. Baker, Salisbury, N. C. (No. 1)—6 judges.
J. T. Smith, McComb, Miss. No. 38)—3 judges.
J. E. Carter, Jacksonville, Ala. (No. 5)—2 judges.
L. K. Payne, Marion, N. C. (No. 3)—2 judges.
J. C. Simmons, Cedartown, Ga. (No. 27)—2 judges.
S. M. Hillhouse, Charlotte, N. C. (No. 17)—1 judge.
W. F. Henderson, Moultrie, Ga. (No. 41)—1 judge.
P. A. Wynn, Carrollton, Ga. (No. 3)—1 judge.
Fitz Nuchols, North Charlotte, N. C. (No. 7)—1 judge.
J. O. Edwards, Monroe, N. C. (No. 47)—1 judge.
J. L. Turner, Welland, Canada (No. 9)—1 judge.
J. V. McCombs, Franklinville, N. C. (No. 40)—1 judge.
T. W. Harvey, Waxhaw, N. C. (No. 11)—1 judge.
P. B. Parks, Jr., Erwin, N. C. (No. 42)—1 judge.
P. K. Dry, Landis, N. C. (No. 45)—1 judge.
D. I. Williams, Charlotte, N. C. (No. 13)—1 judge.
J. T. Kersey, New Orleans, La. (No. 16)—1 judge.
W. E. Leveille, Gastonia, N. C. (No. 32)—1 judge.
G. A. Lay, Draper, N. C. (No. 44)—1 judge.

This list of those who received honorable mention from one or more of the judges contains the names of some of the best carders in the South; in fact, we can point to several in the list whom we consider to know as much about cotton carding as any men connected with the textile industry either in the United States or abroad.

It is interesting to note that one article received honorable mention from six of the seven judges while another received honorable mention from three judges.

Last week we republished the prize winning articles and the following are the ones that won the second and third prizes:

Winner of Second Prize

By I. K. Edwards.

The subject covers a very wide scope, inasmuch, as there are almost as many opinions on many points as there are good carders, and in most cases these opinions are worthy of our respect.

We are approaching this subject, assuming, of course, that we have a perfect lap to start with, because we must have a perfect lap if we are to produce perfect carding, even with a perfect card.

Beginning with the feed of lap into the card, we must consider the weight of lap, grade of stock, class of goods to be made and production required to supply the demand of the subsequent processes.

The feed roll must be in perfect condition, flutes free from foreign matter and also free from bruises caused by nails, pieces of bale ties and other metallic substances falling into the lap which should never be allowed to get there as they certainly cause many times more damage than the cost of keeping them out for the feed plate and licker-in also come in for their share of ruin. As the licker-in plays a very important part, it requires the utmost care. The entire working surface must be finished so that each tooth stands at exactly the same height and this can only be accomplished by a perfect winding of the wire. A minimum variation of 1-1000 of an inch is in some cases being considered as a very good working surface, but that of course, is imperfect and should not be considered impossible to overcome.

As the duty of the licker-in is to comb out the fibres as the feed roll delivers them in a tangled mass over the feed plate, and thence to the working surface of the cylinder, it is very important that the teeth be both even and sharp.

The cylinder being the greatest and most rapidly moving part and carrying a much greater working surface requires much more treatment. The clothing must be of the very best quality and put on cylinder by an experienced and careful man and, as the atmospheric conditions vary in the many localities where cards are operated, and those atmospheric conditions influence the condition of card clothing. Great care must be given to drawing on of clothing on cloth cylinder and doffer.

A tension of 350 to 380 pounds on new cylinder and 250 to 300 pounds on doffer clothing with a temperature of 75 degrees.

It is very wrong to draw clothing on a cylinder or doffer where temperature is very low as there is danger of straining or breaking of clothing by expansion of cylinder when temperature rises.

Grinding the wire on the cylinder must be done by a very careful man who is thoroughly "schooled in the art," who can exercise the very best of judgment as to when and how long, and how heavy to grind, and the correct speed to run both roller and traverse, to form the required point on the wire for the best quality of work. The wire on the flats is finer than on cylinder. Also the doffer wire is finer than cylinder so that less grinding is required for flats and doffer.

The drum roll used for grinding flats must be very carefully covered with best quality emery fillet of the number best suited to the number of wire on flats.

Much harm can be done by a small amount of indifference or, haste, trying to get the job done too quickly, when placing a grinding roll on a set of flats to be ground. Not only must the guide weights be set to work freely and accurately, and the bearings properly oiled, and grinding roll accurately set at each end and guide set so that flats will pass under roll properly and chains just the exact length and tension to carry flats steadily, but close watch must be kept to be sure all these stay right all through the grinding process. As the carding operation is accomplished by the fibres being delivered to the cylinder by the licker-in and carried by the licker-in and carried between the cylinder and flats, there must be a perfectly even surface on flats as well as on the cylinder. High and low places caused by careless grinding will not result in a good quality of carded stock.

The doffer requires less grinding than the cylinder as the doffer receives the stock from the cylinder and it runs at a very low speed so that while its burden is very light its surface must be perfectly smooth.

A high or low place, or a mashed place in the wire will make a hole or a cloudy place in the web. The coiler is the final operation of the standard or one delivery type of card and places the stock into cans in condensed form known as sliver.

Now that we have followed the stock from the lap through the card, let us look briefly at the several positions, or distances of working parts with relation to each other known as "settings."

These settings are very delicately gauged to fine adjustments and here again must a high order of intelligence and keen judgment be exercised. Card settings are largely governed by the class of stock, class of goods and quantity of product.

Many varieties of settings are used and some cases differ on practically the same quality and quantity of carded stock.

So, it appears unnecessary to mention any specific order of settings for in any case it would apply to only those whose particular case required them.

For heavy goods where a production of around 160 pounds per card per 10 hours is required, and breaking strength of yarn is of extreme importance it is safest to test out a number of settings very thoroughly and adopt that which gives the desired results. The same proceedure would apply to a case on fine goods where a production of 80 or 90 pounds is required.

Cleanliness must in all cases and at all times be given the closest attention in the operation of cards and a thorough system of cleaning must be established and strictly adhered to.

After we have gone over the mechanical requirements, such as leveling, aligning and setting all the parts, making proper arrangements for

(Continued on Page 26)

PLEASE BROADCAST!

$500.00 Scholarship

is now available for young men and women of the Textile Industry who desire to further their education along technical or cultural lines.

The Board of Governors of the Southern Textile Association have under consideration, and will doubtless accept at their meeting Saturday night, August 20th, the Stewardship of a $500.00 yearly scholarship fund offered by The Hart Products Corporation of New York, consulting chemists and manufacturers of chemicals for the Textile Industry.

If you know of some worthy boy or girl who is seeking to continue his or her education, and is presently handicapped by lack of funds, please bring this notice to their attention.

The purpose of this scholarship as stated by The Hart Products Corporation is as follows:

"The object of the scholarship is to encourage the youth of the Textile Industry to strive for higher technical and cultural attainments and thus by precept and example serve the advancement of the Industry and its personnel."

This scholarship is open to any boy or girl connected with the Textile Industry, or whose parents are connected with the Industry. The scholarship will be awarded by a committee of the Southern Textile Association who will consider all applications impartially with a view of selecting those who, in their judgment, most deserve assistance and encouragement.

Those interested in this scholarship should apply at once. Send applications to Mr. J. M. Gregg, Secretary, Southern Textile Association, 519 Johnston Building, Charlotte, N. C.

Applicants should give their full name, age, address and state briefly how far they have advanced in their school work, their school record, the course they wish to persue, the school they desire to attend; and the name of persons the committee can refer to for information as to the applicant's seriousness of purpose, general ability; and the least amount of money the applicant will need from this fund to continue his or her course.

Award will probably be made during the first week in September.

Ralph Hart, President

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Providence, R. I.

STARCH

Cutting Down Cotton Spinning Costs

DOWN in New Bedford, Mass., there is a practical demonstration in economical cotton yarn spinning going on. If this demonstration were one of theory rather than one of practice it might have but passing notice. But when an organization like Washburn's of New Bedford is sure of the ability of its product to deliver the service claimed for it, then manufacturers cannot help but look into it from the dollars and cents viewpoint.

This becomes particularly so of any device, accessory, or supply, that truly functions to a lessened cost of production while at the same time improving quality. Such an event marks a new departure in any industry. But when a product not only does these things successfully, but can be installed at a cost against the savings realized that pays back the investment within a reasonable period of time, then it becomes an established product of necessity where conditions it aims to correct are present.

Into this progressive sphere have come the Washburn wood top rolls. They tell an economic story that speaks for itself. Over 2,000,000 spindles have been equipped with Washburn wood top rolls during the last seven or eight years all performing so efficiently and economically that the Washburn organization has decided to bring the value of them to the attention of cotton mill owners in a characteristics way.

It is with this sense of realization of the splendid service that its product can deliver, that the Washburn organization has recently built a well glassed-in demonstration room at its plant, and facing the street. It has installed there a 48-spindle standard frame, one of the latest turned out by the Whitin shops, except as to size, and equiped it with Washburn wood top rolls throughout for the sole purpose of showing what these rolls can do and are doing in actual mill practice.

In every case where a manufacturer has sent in some of his roving turer has sent in some of his roving to be processed on this demonstrator spinning frame according to his specifications, the results of such a test have been in every case beyond all expectation of the sender. That is, manufacturers doing so have been astonished to learn that Washburn wood top rolls could perform such versatile service on any type of modern ring spinning frame.

The principal advantages of Washburn wood top rolls are as set forth:

1. They increase the flexibility and versatility of the spinning frame on which they are used. The frame can be changed over from coarse to fine yarns very quickly and easily, merely by changing the size of the roving used and the gears which govern the speed of the rolls. The setting of the roll—i. e. the distance between them—remains unchanged no matter whether the frame be running on 12s made from cotton having a staple of one inch, or whether it be operating on 120s yarn made from cotton having a staple length of 1⅝ inches. Without the use of suitable self weighted middle top rolls, it is necessary to change the setting of the rolls each time any substantial change is made in the staple length of the cotton used, and the time consumed in changing the roll settings is so great that the frames must necessarily be out of production for considerable periods. The use of Washburn wool top rolls eliminates most of the cost of these change-overs from one yarn size to another, and avoids the attendant loss of production.

2. Through better control of the fibres, as they are presented to the front or drawing pair of rolls, the use of the wood top rolls results in a marked improvement in evenness and breaking strength of the yarn, such as cannot be obtained under the old system using heavily weighted middle top rolls.

3. Very substantial economies are being accomplished through the use of Washburn wood top rolls in a modified system of long draft spinning. It has been possible to eliminate one entire drawing process, by this means, while at the same time obtaining, with identically the same kind of raw cotton, a greater breaking strength in the yarn. It is claimed that many mills are getting satisfactory long draft spinning results with the attendant economies involved, merely by the judicious use of these lightweight middle top rolls, at a small fraction of the usual installation cost for new equipment.

In the handling of this demonstration work on Washburn wood top rolls mills are invited to freely submit samples of their own rovings specifying how they should be spun. After the result of such spinning on the demonstration frame have been sent to a mill, the heads are invited down to New Bedford to personally check up on the figures and satisfy themselves that there has been no error and that the figures are precisely as sent out to them.

This willingness to show in actual practice what wood top rolls can do is causing cotton mills everywhere to take advantage of it in their constant search for more economical operation of their spinning rooms. With such practical mill men as William M. McCaskey, and Harry L. Ray, formerly general superintendent at the Potomska Mills and more recently manufacturing executive of the Flint Mills of Fall River, in charge of this demonstration work it follows that mills sending in sample roving are bound to receive a report as practical and as accurate as tried and true mill men make them.

In describing tests made for several mills in Newbedford, and elsewhere Mr. Ray has the following to say:

"One mill was spinning 36s yarn with a draft of 12 from 6-hank double roving, producing yarns sizing 35.09 and having 45¾ pounds breaking strength.

"We spun 36s yarn from their 2-hank single roving with a draft of 18 producing yarns sizing 35.25 with a breaking strength of 46 pounds.

"Another test we made," he continued, "was in spinning 40s yarn out of 1⅜-inch staple cotton for a mill which was using 8-hank double roving and producing yarns with a breaking strength of about 40 pounds. We substituted 6-hank double roving for the mill's 8-hank and used a draft 13.30 instead of their 10 draft, and produced 40s yarn with a breaking strength of 43 pounds—three pounds greater than the mill was getting and we used a much coarser roving to start with."

He described another experiment with 82s yarn. "The mill used 16-hank double roving with 10.20 draft, and, where the mill was showing a 12-pound break, using a 12-hank roving and 13.60 draft.

"Another mill has been spinning 20s yarn using 4-hank double roving with a draft of 10, and getting a break of 96 pounds. We used 2.42-hank double roving with a draft of 16.50 and got a break of 95 pounds. The slightly smaller breaking strength in this instance is negligible in view of the longer draft and the difference in roving, and serves to bring out our contention that these wood top rolls provide all practical advantages of long draft spinning at small cost."

Basing their statement upon the results of actual experiments conducted with the wood top rolls both in mills and at the Washburn plant, Mr. McCaskey and Mr. Ray assert that use of these rolls for long draft spinning effects a saving of at least one-half cent to one cent per pound in the actual manufacturing of yarns. It applies to all methods of long draft spinning, and a greater saving is made from a single roving, but here it becomes a matter of choice.

The big saving, however, is made in the card room. For example, if a mill is spinning 60s from a 12-hank double roving with a draft of ten, then changes to 6-hank double roving with a draft of 20, the roving is then made on a roving or second intermediate speeder eliminating the Jack thereby saving this extra cost besides permitting a much greater production than from 12-hank.

The saving of power by the stopping of this extra process is another factor to be considered including the extra hands that are required for this process such as roving men, oilers, etc. In some cases a few more sides are given the spinners as the roving lasts so much longer on the long draft spinning that it enables the spinner to take care of more sides and still be able to do the work that is necessary. Although by doing this a saving is made, it must be determined entirely by the mill itself. The saving is variable, depending upon the number of yarn and the type of roving used. The finer the yarn. the greater will be the saving.—Fibre & Fabric.

Cotton Supply 21,789,309

Washington, D. C.—The supply of cotton in the United States for the cotton year of 1926-1927 which ended July 31 was placed at 21,789,309 equivalent 500 pound bales by the Census Bureau, while distribution of cotton was placed at 21,927,405 bales.

The 106,09 bales difference between the supply and distribution figures was due principally to the inclusion in all distribution items of the "city crop." which consists of rebaled samples and pickings from cotton damaged by fire and water.

The supply, as compiled by the Census Bureau, was made up as follows:

On hand, August 1, 1926, 3,542,560 bales, of which 1,096,647 bales were in consuming establishments. 1,935,913 bales were in public storage and at compresses, and 540,000 bales (partially estimated) were held elsewhere.

Net imports, being total imports less re-exports for the year ending June 30, were 376,771 bales

Ginnings during the 12 months were 17,869,978 bales, of which 17,707,300 bales were of the crop of 1926 ginned after July 31, 1926, and 162,678 bales were of the crop of 1927, ginned prior to August 1, 1927.

The distribution was as follows:

Net exports, being total exports less reimports, 10,922,652 bales.

Consumed, 7,202,724 bales.

Destroyed (ginned cotton) 70,000 bales.

On hand July 31, 1927, 3,762,029 bales, of which 1,404,358 bales were in consuming establishments 1,822,671 bales were in public storage and at compresses, and 535,000 bales (partially estimated) were held elsewhere.

Record Rayon Consumption

Each succeeding estimate of the volume of production of the domestic rayon industry outstrips its predecessor. During the first half year, output exceeded $5,000,000 pounds, while shipments advanced to the record total of 43,000,000 pounds. According to one authority the total consumption of rayon during the first half year, including the foreign importations, totalled 60,000,000 pounds. For the year it is believed that consumption will reach at least 90,000,000 pounds, of which 70,000,000 pounds will represent current domestic manufacturing output, 8,000,000 pounds will be accounted for by surplus on hand at the beginning of the year and the rest will be covered by imported supplies.

Suggestions that imports are hurting the industry seem, under the circumstances, decidedly far-fetched, and yet complaints to this effect have evidently been preferred, as the Government is investigating charges that foreign yarns have been dumped in this market at prices lower than those obtained abroad. As matters stand it is obvious that the domestic manufacturers are not in a position to meet all consuming requirements and apparently the demand is continually expanding. So it is extremely unlikely that foreign yarns are being disposed of on terms that constitute any danger to domestic interests considering the oversold condition of the market.

To exclude foreign yarns under present conditions would no doubt create scarcity values for rayon products for the time being and hence enable producers to raise prices without suffering any immediate loss of business.

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Member of Audit Bureau of Circulations
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David Clark	*Managing Editor*
D. H. Hill, Jr.	*Associate Editor*
Junius M. Smith	*Business Manager*

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Raving About Cotton Estimate

THE speculators, and those who followed their advice, are raving about the recent Government cotton crop estimate of 13,490,000 just as they raved last year when in the face of private estimates of 14,000,000 bales the Government made an estimate of 15,600,000 bales.

Then they swore that the estimate was far too high just as they now swear that the present estimate is too low.

In the midst of a multitude of foolish statements there are some sane and sensible ones and we note the following in the weekly letter of Wrenn Bros. & Co., of New York:

> Notwithstanding the manifest tendency to criticise the small official production forecast of last Monday, we see nothing to be gained by academic discussion of its accuracy. The cotton trade of the world recognizes the Government Reports as the most reliable guide to prospective supply and these serve as the basis or adjustment of values. The crop reporting board gave weight to weevil damage but losses in condition and acreage largely account for its small yield indication.
>
> We feel that some time may be required for the trade to fully adjust itself to the current level of prices but we regard such an adjustment as inevitable. Meantime the position of the textile industry is so much better than in any recent year of twenty-cent cotton that we doubt if such prices will impose a heavy burden on it or result in material early contraction in consumption. Adverse effect of such prices would be substantially modified in the event of further untoward crop developments.

The Government estimated an indicated lint yield per acre of 156.8 pounds against an average since 1921 of 155.7.

In the face of heavy boll weevil infestation we doubt if such a large average yield per acre as 156.8 can be reasonably expected and do not expect the crop to prove to be as great as 13,492,000 bales.

Early in July we made a survey of the situation from an entirely unprejudiced standpoint and became convinced that the private estimates were in excess of the size of the crop that could reasonably be expected.

The bear drive which was put on by the speculators at that time caused many to disagree with us and there is no doubt that many mills were induced to sell out their cotton during the decline.

Feeling sure that our position was correct we said in our issue just prior to the Government report:

> The decline in the cotton market during the first of this week has not changed our opinion that higher prices will come as the result of severe boll weevil damage.
>
> It appears to us that the drive during the early part of the week was made by speculators for the purpose of running the public out of the market and getting their margins.

It now appears to us that that was exactly what happened.

In the face of heavy boll weevil infestation, the private estimates were showing crops which meant around 170 pounds of lint per acre whereas no such yield could reasonably be expected and most of those who made private estimates probably knew that they were not correct.

The drive which was made with the private estimates as the major influence "whip-sawed" the cotton mills and the public out of several million dollars.

It makes no difference to us whether the market goes up or down, but when we are convinced that a situation exists we do not hesitate to give an expression.

We did our best to make mills see that a bullish situation existed but most of them preferred to listen to the voices of speculators who make estimates for influence rather than for accuracy.

Aiding the Buyers

THE manufacturers who has cotton goods to sell, is as far as we can learn. the only seller in the United States who habitually gives expression to statements tending to keep buyers from buying his products and to aid them in securing lower prices.

The buyers of cotton goods are expected to talk about high cotton decreasing the consumption and about the stock of cotton in Europe.

Statements of that kind are expected from a buyer, but it is rather strange to see in a New York paper a statement by the president of a cotton manufacturers association making such statements for the benefit of the buyers.

Can anyone imagine the president of Sears, Roebuck & Co., or Montgomery & Ward, coming out with the statement that business is going to be bad and that the purchase of mail order goods will be decreased.

The cotton manufacturing business is the only one in which the men who sell the goods, deliberately and regularly put into the mouth of the buyers arguments against buying and paying the price.

Buyers of cotton goods put forward their arguments for lower prices even when they do not believe them, but the manufacturers of cotton goods are too, shall we say honest, to allow the buyers to buy without laying before them all the arguments against buying.

Before President Walker D. Hines of the Cotton-Textile Institute is through he will have learned something about a new type of business man. For the sake of charity we will call the man "the honest seller."

The Period of Doubt

ON August 8th the Government surprised the trade with a crop estimate of 13,492,000 bales.,

Thanks to the very brilliant action of the cotton manufacturers in aiding in eliminating the semimonthly reports, the trade must wait until September 9th for a confirmation or denial of the accuracy of that estimate.

Mills are not sure enough of its accuracy to buy cotton and the buyers of cotton goods will for thirty days be able to use the question of its accuracy as an argument against paying advanced prices for goods.

If there could have been a semimonthly report about July 25th, to verify or deny the 13,492,000 estimate the mills would have accurate information upon which to proceed.

Now the market will be at the mercy of private estimates, most of which are made for effect rather than for accuracy, and the cotton manufacturers must float upon a sea of uncertainty.

With the semi-monthly reports the market made an orderly decline last season and at no time was there a 3½ cent movement in two days, such as resulted when the August 8th report came upon a market situation created by private estimates made just prior to that report.

The stabilizing influence of frequent reports is beyond question and mills will pay a big price as a result of their action in insisting that the Government withhold its information and allow the speculators full sway with private estimates.

The Passing of Governor Comer

THE news of the passing of ex-Governor B. B. Comer of Ala., president of the Avondale Mills, will be received with deep regret.

Governor Comer was a man of great mental force and verility and ranked as one of the leaders of the textile industry of the South as well as being a leader in political affairs.

He built up a great chain of mills which he consolidated under the Avondale Mills, and their success was very largely due to his unusual business ability.

End of the Rope

FOR several years the South has been taking New England's second hand machinery and equipment, and while some extraordinary bargains have been secured in a general sense, our Southern friends have been picking lemons rather than peaches in their promiscuous buying of used machinery.

This buying for Southern account has run its course and now there are no more critical purchasers than Southern mill men, and the situation narrows down to specialty buying on a quality basis with full value demanded and given on a modern equipment basis.

We have used machinery dealers here in New England prepared to fill individual requirements, and there is high merit in what they have to offer, or they are prepared to supply exactly what is ordered, but the dumping process is at an end and mill men as a general rule are seeking first use of modern equipment as the safest way to meet the growing competition in all kinds of yarns and fabrics.—Fibre & Fabric.

The Visiting Europe Articles

Lydia Cotton Mills
Clinton, S. C.
August 13, 1927.

Mr. David Clark,
Charlotte, N. C.

Dear Mr. Clark:

I find your article "Visiting Europe" very interesting, certainly one of the best I have ever read.

Mrs. Bailey, my daughter and myself, eagerly await the Bulletin each week for this article.

The last issue of August 11, the trip from Calias across the channel shows that you were an acute observer, a good listener and an excellent performer.

I hope when you embark at Calias again it will not be raining.

With best regards,
Yours sincerely,
C. M. BAILEY.

Personal News

L. F. Adams has been promoted from night to day overseer of spinning at the Kershaw Mills Kershaw, S. C.

C. E. Allran, of Lincolnton, N. C., is now second hand in spinning No. 4 at the Erwin Mills, West Durham, N. C.

H. T. Ficklin has resigned as overseer of spinning at the Kershaw Mills, Kershaw, S. C., and accepted a similar position at the Aragon-Baldwin Co., Whitmire, S. C.

F. J. Cartledge, of the Ipswich Mills, Mass., has become general superintendent of knitting and finishing at the Durham Hosiery Mills, Durham, N. C.

C. J. Trippe, formerly overseer of spinning at Steele's Mill, Rockingham, N. C., ha saccepted a similar position with the Fountain Mills, Tarboro, N. C.

R. M. Hornbuckle has resigned as overseer of slashing and warping at the Southern Specialty Company, Charlotte, N. C., to become overseer of silk beaming at the Carl Stohn Company, Charlotte, N. C.

W. L. Sanders has resigned as overseer of carding at the Kings Mountain Manufacturing Company, Kings Mountain, N. C., to become overseer of spinning at the Elmira Mills, Burlington, N. C.

Ex-Gov. B. B. Comer Dies at Birmingham

Birmingham, Ala.—Braxton Bragg Comer, former governor of Alabama, died at his residence here August 15, after an illness of more than a month. The former governor waged a battle against the illness, which physicians declare, in view of his 78 years of age, was no less than remarkable.

Mr. Comer was born in Spring Hill, Ala., November 7, 1848, the fourth son of Mr. and Mrs. John Fletcher Comer. He grew up on his father's plantation near Spring Hill, attended the University of Alabama, the University of Georgia and Emory and Henry College in Virginia.

In 1872 he was married to Miss Eve Jane Harris, of Cuthbert, Ga., the young couple making their home in Barbour county, Alabama, where Mr. Comer engaged in business, milling, merchandising and planting, until 1885. Nine children, four boys and five girls were born to the union.

His entrance into politics came in 1904 when he was elected to the presidency of the Starr commission. In 1906, he was chosen in the Democratic primary for the governorship of Alabama and later elected on an economic platform.

During his administration, a child labor law was passed which forbade employment of children under 12 years of age. He also sponsored a compulsory educational law requiring children under 16 years of age to attend school at least eight consecutive weeks during the school term.

Welfare work among the cotton mill workers of the State occupied no small part of his time. The mill communities of Mignon and Sylacauga, with community recreation halls, swimming pools, football, baseball and basketball teams, concert bands and well lighted streets, are considered models among Southern cotton towns.

J. J. Wilburn Drops Dead

Seized with a sudden heart attack, James J. Wilburn, for 25 years bookkeeper for Enoree Mills, Enoree, S. C., died in the plant office at that place at 8 o'clock a. m., August 15th.

Mr. Wilburn had just entered the office to begin his duties for the day when other employes in th building saw him fall to the floor. He expired before medical attention could be summoned.

Mr. Wilburn was 62 years old and a native of Union county, being born and reared at Cross Keys. He has been in the employ of Enoree Mills for a quarter of a century, but all of his time had not been spent at the plant there.

A. O. Norris Dead

A. O. Norris, superintendent of the Barringer Manufacturing Company, Rockwell, N. C., died suddenly on August 9th. Mr. Norris, who was a member of a family that is well known throughout the textile industry of the South, had been superintendent of the Barringer Manufacturing Company for more than 10 years. He was a man of high character and was held in esteem by all who knew him.

Worker Falls into Pot of Boiling Dye.

Concord, N. C.—R. C. Champion, of 311 South Cedar street, Charlotte, an electrical worker, was horribly burned August 11th when he fell into a dye kettle at a local textile plant. At the Concord hospital, where he was rushed for treatment, it was said his condition was as favorable as could be expected.

Champion was working with electrical wires over the kettle when his ladder slipped. He crashed into the kettle, filled with about three feet of boiling water and dye. One leg was burned from the foot to the knee and the other from the knee to the waist. There were other less serious burns where the boiling liquid splashed against his body. The burns on his legs are considered serious.

Champion could not leap from the kettle without some slight delay because the ladder fell on top of him.

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Our facilities and organization are always at your disposal. Acquaint us with your problems!

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MILL NEWS ITEMS OF INTEREST

Columbus, Ga.—The Swift Spinning Mills are having plans prepared for an addition to the mill. Robert & Co., Atlanta, are the engineers.

Woodruff, S. C.—The Mills Mill No. 2 have let contract to Walker Electric and Plumbing Co., Atlanta, for installation of a new lighting system.

High Point, N. C. — The Hosiery Corporation, of this place, to manufacture and sell hosiery, socks, etc., has been authorized with capital stock $100,000, subscribed capital $300 by Thomas Turner, Jr., Ralph B. Denning and C. B. Miller all of High Point.

Statesville, N. C. —The Statesville Cotton Mills are installing new equipment, including 20 cards and other preparatory machinery. The mills are also constructing a 75,000 gallon reservoir and have plans for other improvements during the year, it is stated.

Greer, S. C.—It was brought out by Mr. Westmoreland of Spartanburg, speaking before the Civitan Club, that the taxes of the Georgia cotton mills, referring especially to the mills at New Holland, Gainesville, Ga., were far less than the taxes imposed on the Pacolet Mills, both of these mills being under the same management.

Louisville, Ky.—Katherine G. McCord has filed notice with the county clerk, affirming ownership of the McCord Co., 745 West Main street, cotton manufacturers. This company owns a mill at Grahampton, Ky., and does a large business in mop and other cotton yarns. C. W. McCord, who formed the company many years ago, died a few weeks ago.

Rock Hill, S. C. — Officials of a well known overall manufacturing company in Ohio visited Rock Hill this week and conferred with the industrial committee of the Rock Hill Chamber of Commerce relative to the establishment of an overall manufacturing plant at Rock Hill. The names of the men and the overall company are being withheld temporarily.

Atlanta, Ga.—The cotton duck mill at the Atlanta Federal Penitentiary furnished employment for 800 prisoners during the last year, and they were paid in bonuses $91,640, according to the annual report of Warden, John W. Snook, which recommends the establishment of a spinning mill as a second unit. This would give employment to another 800 prisoners, he said.

The spinning mill, he said, would effect a saving of from 2 to 5 cents per yard in the cost to the Government of cotton duck. The report, addressed to Attorney General John C. Sargent, is for the Government fiscal year ending June 30, 1927.

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General Designs, Grading, Planting and Detail Plans
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Largest Landscape Organization in the South

Bennett, N. C.—W. C. Brewer, of this place, is installing machinery here for a hosiery mill, which when completed will give regular employment to 25 workers.

Rural Retreat, Va. — S. S. Miller Hosiery Mills, of Reading, Pa., expect to have their local plant in operation this month and will make a high class line of men's hose.

Decatur, Ala.—The last shipment of machinery from the Globe plant of the Connecticut Yarn Mills, at Fall River, Mass., to Decatur, has been shipped. The total spindles removed to the South numbers 35,000, and only the disposition of the land and buildings now remains. The first shipment was made early in May, and since then progress has been rapid in the dismantling of the Fall River plant.

Richmond, Va.—The Artus Knitting Mills, Inc., of Bristol, Va.-Tenn., with capital stock of 250 shares to 500 common without par and $25,000 preferred, has been granted a charter by the State Corporation Commission to manufacture wearing apparel of all kinds. The officers are: William Ray Baldwin, president, Elk Mills, Md.; LeRoy L. Queens, secretary, and J. Wesley Querns, treasurer, both of Bristol.

Greenville, S. C. — The framework has been comeplted on the large addition to the Mills Mill, at Woodruff. The addition is virtually twice as large as the present plant. Tompkins Co., of Charlotte, has the contract for the construction of the addition. Seventy-five houses are being erected in the village to care for the additional help which will be needed. The outlay on both the mill and the houses will be around $400,000.

Inman, S. C.—Bids for an addition 155 feet by 78 feet and four stories high to the Inman mills, will be received in the Office of J. E. Sirrine & Co., Greenville engineers next Monday, officials have announced. The plant at present has 40,000 spindles and the addition will greatly increase this number. The approximate cost of the addition has not been made public.

York, S. C.—A proposition to establish a silk mill here on condition that half the capital stock, or approximately $150,000, be subscribed locally, was presented to a score of York business men recently by L. F. Winnie, of Union, at the head of a succesful silk mill in that city. The York men heard the proposition with keen interest but reserved their decision as to trying to put the measure across until Mr. Winnie submits in writing a more detailed outline of his plan.

The meeting was held in the city hall aditorium and was presided over by T. M. Ferguson, president of the York Business Men's Association. Glenn Moore Barron, Union attorney, who is a native of York county, made a short talk in the interest of the proposed mill and told of the success of the Union mill under the guidance of Mr. Winnie.

Charlotte, N. C. — The Southern Friction Fabric Co., organized a few weeks ago by F. D. Murdock, and J. W. Burnette, of Greenville, S. C., and a number of associates at Charlotte, has practically completed and is putting in operation its new plant, which is located a short distance west of Charlotte. The company will manufacture asbestos brake lining and other asbestos cloth. The initial installation in the plant consists of six looms and the output will be approximately 10,000 pounds of asbestos cloth per week.

Petersburg, Va.—The Swift Creek Cotton Mill, in Chesterfield county, three miles from Petersburg, and other property of the Chesterfield Manufacturing Company was sold at public auction August 15th. The property was sold for cash by the Virginia Trust Company under a deed of trust for the second mortgage to the extent of $60,000. The purchasers were business men of Petersburg and Kinston, N. C. The principal buyers were given as H. C. Wooten and W. B. Douglas, who recently purchased cotton mills at Kinston, N. C.

The property was recently appraised by nationally known textile engineers at $400,000.

Troy, N. C.—The time limit set by the courts for filing a higher bid for the Rhyne-Anderson Cotton Mill, of this place expired Monday afternoon, and reports received here indicated that no bid for the property was on file except that of approximately $45,000, which was submitted twenty days ago by E. O. Anderson, of Charlotte, manufacturer and financier. The property was placed in bankruptcy proceedings several weeks ago. Wesley T. Heath, of Charlotte, is president of the bankrupt company. Milton Ensor, who managed the mill two years prior to the failure has been acting as receiver.

Concord, N. C.—Announcement of the sale of the Concord Knitting Co., of this city, to the Willis Hosiery Mill, of High Point, has just been made by A. R. Hoover, one of the former owners of the plant, stating that Mr. Willis would be resident manager.

The plant has 100 machines and has been successfully operated for several years. The purchase price was not announced. E. W. Frieze, of High Point, formerly a resident of Concord, is one of the stockholders in the Willis Mill, and it is understood he took a prominent part in the negotiations leading to the purchase. The new owners plan to continue operation of the plant on full time.

Sumter, S. C.—It is rumored that the London Mills here are planning an expansion of their manufacturing plant. They have been operating at Sumter for approximately two years and business has been so good that an increase of the output is said to be desirable.

Jewell, Ga. — The Jewell Cotton Mill, near here, owned by Gant Bros., of Burlington, N. C., which has been in continuous operation since 1865, was entirely destroyed late Saturday by fire which criginated in an attic of the main building of the plant, from an undetermined cause, doing a damage estimated at $200,000.

The old settlers of Jewell recall that General Sherman, in his victorious march to the sea during the Civil War, ordered his men to put the torch to the main buildings of the plant. When he caught sight of a Masonic emblem suspended over the front entrance, he immediately ordered his men not to molest the building.

James Gant, president of the company, stated that the mill will be rebuilt as soon as insurance adjustments were made. About 200 people were employed at the plant.

Florence, Ala.—Gardiner & Warring Co., recently of Amsterdam, N. Y., expects to cpen its line of men's flat balbriggan and mesh shirts, drawers and union suits, made at Florence, Ala., in New York, some time this week, according to William C. Jones & Co., exclusive selling agents.

Charles F. Swanker, secretary, and Jewett T. Flagg, treasurer, were in New York recently and stated that the new mill would maintain the same high standard of goods as was established at Amsterdam. The new mill, which includes warehouse and bleach and dye house, has just been completed .

The Verdict is Unanimous
HART TO BEAT
H.P.C. WARP DRESSING
is "HART" TO BEAT!
THE HART PRODUCTS CORP. 1440 B'WAY, N.Y.

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Bulletins of Results
WASHBURN WOOD TOP ROLLS
—for—
Spinning Frames

No. Yarn—100
Twist Square—3.90
Turns per inch—39
Staple—1½"
Kind—Combed Sak
Hank Roving used—9.3D
Draft—21.80
R. P. M. Spindle—9300
R. P. M. Front Roll—76
Weight Top Roll—1100
Average Size—100.2
Average Break—20

The above is a record of a test recently made using roving taken at random from a large fine goods mill.

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60 to 500
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Fabreeka Belting Co.
Southern Headquarters, ROCK HILL, S. C.

Winner of Second Prize

(Continued from Page 18)

oiling all bearings, using a suitable oil for each according to its load and speed, we must consider the human agency to be employed in the operation of the card. The card hand must know the duties of his machine as well as his own. In placing a lap he must piece the two ends together so that the same amount of stock goes through the feed roll as would go through were there no piecing.

It is easy enough to instruct a card hand to do this but one of the most essential "fine points" is to train the card help to do this and then know beyond a shadow of doubt that it is being done. A careless card hand is too expensive to keep.

Also when stripping, the end must not be pieced up until enough stock has accumulated on the doffer to bring the weight of sliver to normal.

This can be determined by timing to see how long it takes to reach normal weight and then require the stripper or card hand to wait just that long before piecing.

If a light place in the sliver should accidentailly reach the can take it out by all means.

A card must rest on a firm, steady floor, free from vibration, and kept perfectly level and alligned. All bearings adjusted to give perfect freedom of movement to all revolving parts, weights on feed rolls carefully regulated to suit weight and thickness of lap.

All openings at bottom and sides of card must be kept closed while card is running.

No air air currents must be allowed to flow through the channels where the fibres are being carded to disturb the film on its way to the doffer and causing unevenness in the web. The flat stripping comb must be set to remove strip from flats without striking wire and damaging both the wire on flats and the teeth on the comb. Brushes must be run at a speed that will keep flats clean and with correct grinding, excessive use of burnisher may be avoided and the life of the flats prolonged.

Where humidifiers are used in the card room extreme care must be taken to avoid excessive moisture which injures flats.

Too much stress can not be placed on the "fine points of carding," owing to vast numbers of parts employed in one machine, the variety of operations, and the fine adjustments required to change the bulk of lap into the delicate film and finally to a uniform sliver.

We have tried in a way to bring out a few of these, realizing of course that there is yet a vast territory to be covered in the art of carding which will doubtless be gradually developed as time goes on. ROMER.

Winner of Third Prize

By F. E. Latham.

There are several elements that enter into the process of carding cotton, and everyone who would make a success of carding must have certain qualifications. First, there is the element of enjoying your work, and taking pride in the quality of finished work turned off by your cards. Also, you must have good judgment and a keen sense of touch. You must give your employers the benefit of your experience. You should have that adaptability or personal touch, which go a long way in making your cards reflect

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Our Automatic Shuttles are giving Perfect Satisfaction in Leading Mills throughout the country on all classes of work.

your knowledge. A man's knowledge should "improve with use." And he should always cultivate that sensitive touch.

On a cotton card the clothing should always be good and tight. And should be ground to a very even surface. The clothing manufacturers specifications are a very good standard to adopt for your work. After seeing that your cylinder, doffer and flats are ground true, we will take the method of setting up a card. Presuming that we have good laps to run, I will take ⅞ or 15-16-inch staple cotton for my standard. We will set the licker-in, after having seen that it is in good condition, to cylinder .007, then remove it and set the bottom screens, front ⅛-inch, bottom .034, back part at licker-in .015. This gives us a good air draft under card. Now we will set back plate .015 at bottom and .012 at top. We then turn cylinder over slowly to see if it rubs any part, if not then we replace licker-in and set our screen toe to licker-in ⅛-inch. Now several screen toes are made with the ribs very wide. I removed these ribs and inserted a perforated sheet tin instead and cut my fly at least one third, and get out more dirt and foreign matter. Now set our feed plate to .010 or if you determine that the majority of your staple is good and even then set to .012. If set any closer the licker-in will cut your fibres and lower your breaking strength. But before you leave this setting see how far your mote knives are from the bottom of your feed plate. Then remove feed plate and set your knives to the licker-in top to .007, bottom .010. But the distance between top knife and feed plate must be determined by the fly that is thrown out by your make of card. Not all are alike in this respect. This should be studied very carefully. Having set our knives to their positions we replace feed plate at the correct setting, then take our flats next.

Most all grinders and overseers take out one flat at each stand, but I learned to take out one, leave one, take out one, that gives you one flat at center of stand, instead of a vacant space. I have found this method very satisfactory, while it take a little more time. To get a correct setting of you flat you must consider how much you can put through each card and and do the work properly. Take a production of 100 to 125 pounds per card in 10 hours. My flats are set as follows, and give very good results: Back .011, then to the top or middle stand set it to .010, then your back middle should be a little tight on .011. Then set the front to .009, and the middle front should be a little tight on .010. Turn your card cylinder to ascertain if it rubs or touches any flats. See that all nuts are tight. Then the percentage or front plate is adjusted to .022 at top and .034 at bottom. Of course, this setting varies, as to the amount of toppings required. Set the bottom plate to .022. Then we adjust doffer to cylinder by loosening the bearing nuts a little then pulling it in with the adjusting rod nuts. Set doffer to .007. See that all nuts are good and tight then turn cylinder and doffer partly over to see that your setting is true. Take the comb with your hand and see that it works very freely, then set to .012. Now set the comb so that the web will bag just a little. Never allow your card to have an excessive draft of air or tension. Now put your lap on the card and put it in operation. Note the quality of your work and always keep your eye on the selvedges, as they generally show the neps and bad carding first.

If you are crowding your cards with work, then to speed up the flats a little will help as they take out most of the neps and other substance which your screen and mote knives do not get. Do not over speed a card or expect the very best of work, if your laps are not up to the standard you require. Your card hand should not be overloaded with cards or he cannot give them the proper attention.

And another very important thing is to get the very best grinders possible. It takes many years experience to make a good grinder. I am sorry that there are not many promising ones coming up.

To get the best result from all your cards, your grinder must always be on a tour of inspection to catch the little things so they cannot develop into big one. Caution your card tenders against allowing a card to choke, both at licker-in or at doffer, for every choke has its bad effects. Because the very best results we get from a card is not as good as we would like to have it. The better the carding expected the better the grinder and tender rquired. One other thing that is necessary is the temperature and humidity, for both of these are factors in good carding and should not be overlooked. And again you should have your cotton properly processed before using it, for it should be opened at least twelve hours before carding.

"Corn Husker."

Textile Output Breaks Records in First Six Months

(Continued from Page 17)

of 1927 over 1926 will continue during the last six months of 1927 over 1926.

The sharp gain in cotton prices would tend to restrict consumption. However, the total should exceed that of last year. The outlook for rayon is the most favorable of the four major textile industries with indications that consumption during the last six months will exceed the first six months by at least 5,000,000 pounds.

Celebrate 25th Anniversay of the Mandeville Mills.

Carrollton, Ga. — Watches were presented to five oldest employes of the Mandeville Mills at the celebration of the company's 25th anniversary here recently. The presentation was made by J. A. Mandeville, president of the mills.

S. L. Lowman

Information is desired regarding whereabouts of above party. Weight about 180 pounds, height 6 ft. Sandy hair, wears glasses. Please notify H. L. Lowman, Brookford, N. C.

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Pacific Mills

Boston, Mass.—Pacific Mills made the expected and encouraging improvement in earning power in the second quarter of this year. Net profits after all charges save taxes were $418,795 for the period, against $290,271 in the first three months and an actual loss for the second quarter of 1926.

Net sales of $21,471,840 for the first six months of 1927 were $2,055,026 or almost 9 per cent less than in 1926, but profits of $709,066 were $481,472 or 212 per cent larger. The relative figures not only show the effect of greater all-round efficiency, but they reflect fundamentally the cessation of inventory write-offs tha' might naturally be expected as corollary of rising, instead of falling raw material prices.

Inventory write-offs have taken a heavy toll of textile earning power of late years; they cost Pacific Mills in 1925 and 1926 a total of $2,219,905. In these days of rigidly-controled inventories and material commitments and rising raw materials it is a safe guess they have disappeared.

Instead of the negligible 9-10 per cent margin of profit prevailing the first half of 1926 the Pacific Mills profit ratio was 3.30 per cent in the half-year just closed. The former fair profit margin of 6 per cent would have spelled an earning power of almost $1,300,000.

Outlook for Pacific for the coming months is reasonably encouraging. Unfilled orders are larger than a year ago and are sufficient to ensure the continuance of current manufacturing operations for the balance of the third quarter. July and August are rarely large months for billings, however, so it is unreasonable to look for any particular bulge in profits.

The company is in easy financial condition, largely as the result of the sale in Feb., 1926, of $17,500,000 5½ per cent five-year notes. Cash and governments total over $7,000,000, and there are no bank borrowings. Net quick assets as of June 30 were over $27,725,000, an increase of $1,100,000. After deducting the $17,500,000 note issue of 1931 net quick assets are equivalent to over $25 a share on the 396,123 shares of stock. —Boston News Bureau.

Rome Mills Raise All Cotton Hose 2½c

Rome Hosiery Mills, Rome, Ga., have advanced the price on its entire line of cotton hose 2½ cents a dozen. This brings its men's 176-needle sock to 92½ cents a dozen, the women's 1¼-pound, 176-needle stocking to 90 cents, women's 1½-pound, 176-needle stocking to $1, and chiidren's 28-ounce stocking to 90 cents for size 7.

This action on the part of Rome is regarded as particularly significant, coming as does right after the low cotton crop report. When John M. Berry, president, was visiting his New York office last month, he stated that he anticipated a necessary advance before the first of September, so that this move cannot be considered in the nature of a surprise. While none of the other manufacturers of cotton hosiery have made any announcements as yet, it seems likely that they will follow suit shortly, and it is intimated that some of them have already put through business at advances.—Daily News Record.

Consumption for July

Washington, D. C. — Cotton consumed during July totaled 569,250 bales of lint and 69,106 of linters, compared with 662,630 of lint and 70,041 of linters in June this year and 461,742 of lint and 66,782 of linters in July last year, the Census Bureau announced.

Cotton consumed during the year which ended July 31 totaled 7,202,245 bales of lint and 802,197 of linters, compared with linters for the cotton year 1925-26.

Cotton on hand July 31 was as follows:

In consuming establishments 1,404,358 bales of lint and 199,050 of linters compared with 1,607,676 of lint and 217,285 of linters on June 30, this year, and 1,096,647 of lint and 143,630 of linters July 31, last year.

In public storage and at compresses 1,822,671 bales of lint and 52,831 of linters, ocmpared with 2,164,108 of lint and 58,784 of linters on June 30, this year, and 1,935,913 of lint and 52,899 of linters on July 31, last year.

Cotton imported during July totaled 31,147 bales, compared with 36,055 bales in June this year and 12,090 in July last year. Imports for the 1926-27 cotton year totaled 400,933 bales, compared with 325,511 for 1925-26.

Exports for July totaled 389,358 bales, including 17,479 bales of linters, compared with 481,943 bales, including 13,462 of linters in June this year, and 366,722 bales, including 11,045 of linters in July last year.

Exports for the cotton year of 1926-27 totaled 11,183,938 bales, including 257,324 bales of linters, compared with 8,155,570 bales, including 104,079 bales of linters in the 1925-26 cotton year.

Cotton spindles active during July numbered 32,311,812 compared with 32,753,428 in June this year and 31,057,484 in July last year.

Statistics for cotton growing States are:

Cotton consumed during July totaled 415,278 bales, compared with 474,577 bales in June this year and for the 1926-27 cotton year consumption totaled 5,194,160 bales, compared with 4,500,243 bales in the cotton year of 1925-26.

Cotton on hand July 31 was held as follows:

In consuming establishments 881,885 bales, compared with 1,036,747 bales on June 30 this year and 624,345 on July last year.

In public storage and at compresses 1,498,572 bales, compared

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EMMONS LOOM HARNESS AND REEDS

with 1,828,821 on June 30 this year and 1,708,461 on July last year.

Cotton spindles active during July numbered 17,642,754 compared with 17,666,610 in June this year and 16,920,526 in July last year.

Glanzstoff Plans Win in South

Johnson City, Tenn.—Responding to the appeal of the citizens of upper east Tennessee to save the $37,000,000 American Glanzstoff plant, the county court of Carter county has approved by a vote of thirty-seven to four the construction of the Johnson City-Glanzstoff highway and voted $115,000 to defray the construction cost of the Carter county link from the Washington county line to the Glanztoff site.

The short Washington county link from Johnson City to the county line had already been arranged by agreement.

Immediately following the announcement of the vote officials of the Glanzstoff Corporation announced that immediate construction work on the first unit of their rayon plant in Happy Valley would be started. The work had been held up pending the guarantee of the highway as the Glanzstoff company stated that they must have a short and direct connection with this city. The new highway will be about four and one-half miles long.

Dr. Arthur Mothwurff, president of the corporation, said recently: "The decision of the court of Carter county to appropriate the funds necessary for the construction of a new road to Johnson City has again demonstated the progressive and patriotic spirit of this body. I am certainly glad the court did vindicate its reputation. We shall proceed with construction at once."

With the start of actual work on the second unit of the American Bemberg Corporation plant this week and the anticipated beginning of excavation work of the first unit of the Glanzstoff plant next week industrial activity in Happy Valley, between Johnson City and Elizabethton, will reach a peak next month. Lockwood, Greene & Co., of New York and Charlotte, N. C., are general contractors on both jobs. The Bemberg unit is estimated to cost about $2,500,000 and the Glanzstoff unit is estimated at $3,000,000.

About a fortnight ago the Carter county court voted down the proposal to appropriate funds to pay for the county's share of the 4¾ miles of new highway connecting Johnson City with the selected site of the American Glanzstoff Corporation plant in the Happy Valley.

Glanzstoff officials refused to authorize any further steps toward the construction of the plant until the road was authorized and definitely assured, stating that its construction was essential to their plans as furnishing a direct and short route to Johnson City, the present highway being badly congested.

Advance reports indicated that the road would be approved, as many prominent merchants and residents of Carter county realize the value of the industry to the section and have therefore been cooperating with Johnson City and Glanzstoff officials.

Last week Governor Austin Peay of Tennessee made a direct appeal to the citizens of Carter county to build the road. This week a joint committee of members of the Johnson City and Elizabethton Chambers of Commerce visited Nashville and made tentative arrangements with the State Highway Commission whereby it is understood that the road, when built, will be taken over by the State as a State highway.

Considerable confusion has occurred regarding the capitalization of the Glanzstoff Company. Recently a Nashville report stated that a charter has been granted providing for $37,000,000 capitalization, and contradictory statements were received from New York which referred to the company as a Delaware corporation capitalized at $7,000,000.

Investigation has revealed that both statements were substantially correct. The American Glanzstoff was incorporated in Delaware, with offices at 7 West Tenth street, Wilmington, according to the charter, which gives the capital stock at 70,000 shares preferred, having a par value of $100 each, and 300,000 shares of no par value. Eastern reports used only the stock having par value to fix the capital at $7,000,000.

However, when the company domesticated in Tennessee, it appeared that the Secretary of State figured the no par value stock at $100 per share, and listed the American Glanzstoff as having $30,000,000 common and $7,000,000 preferred. The corporation therefore paid the maximum filing fee in Tennessee of $1,520, and this was the basis for the $37,000,000 capital report.—New York Journal of Commerce.

G. C. George

Any information concerning the whereabouts of above party, who is my father, will be appreciated. Mrs. Eula Boone, Union, S. C. Rtd. 3, care W. H. Bramlett.

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Wanted

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Nurserymen—Landscape Architects

Visiting Europe

(Continued from Page 15)

sight-seeing, but it happened that the House of Parliment was open to visitors that afternoon and I was pursuaded to go.

We had to go through rather hurriedly with policemen as guides but it was rather interesting to see the historic rooms.

I was very much surprised at the arrangement and the small size of the House of Lords.

Unlike the Senate of the United States they have no desks except one or two for officials and no gallery except a very small one for distinguished visitors.

I was shown the seat occupied by Lady Astor who is the only woman who ever sat as a member of the House of Lords. She was born in Virginia, but married Lord of Astor of England and about ten years ago entered politics.

In the halls of the House of Parliment there are many beautiful and costly pictures and one of them shows Columbus discovering America.

As we passed that picture our policeman guide remarked "What a pity he discovered it" and then realizing that most of his party were Americans added, "that is a joke."

It is idle and offensive remarks of that kind that cause bad feeling between cities and nations.

Because the man who made the remark was an Engiishman, many no doubt blamed England for same. One man does not make a nation or can express the opinion of a nation unless he is high in authority.

Probably ninety per cent of the dislike for Americans which exists in Europe is due to careless remarks of Americans, who were by no means true representative of our country.

We followed our guide all over the House of Parliment, seeing among other things the place where many kings were crowned and went down into the chamber under the House of Lords which was the scene of the Gun Powder Plot.

On Saturday night, I attended my first English play a drama entitled "Yellow Sands."

The English actors are poor comedians and they have so few good looking girls that their musical comedies are not very good, but when it comes to real acting, I doubt if they have any equal.

The play "Yellow Sands" was a simple story of "fisher folks," but I have never seen better acting.

On Sunday morning, Walter Pratt of Charlotte showed up at my hotel and went to lunch with us.

Walter went over on the ship with me, but left Ostend very early because he did not like his hotel assignment, and had spent several weeks at the factory of Joseph Sykes Bros., at Huddersfield, England, whom he represents in the Southern States.

On Sunday afternoon, our party, which consisted of six including Walter Pratt, started out to visit Kew Gardens which is one of the show places of London.

We found that although it was a long distance, Bus No. 181 would carry us near the entrance, so we boarded the bus at a stop near our hotel and made the trip.

On the way it rained six times and we passed six union labor parades.

London is noted for its fogs and its rains and I do not think I saw the sun for more than ten minutes at a time while in England. It rains a while, clears off, gets cloudy and rains again. The Englishmen told me that it was very unusual weather, but I recall that when we have bad weather in Charlotte we tell the same thing to our visitors.

England is overrun with labor unions and they like to dress up and parade on Sundays and it was really interesting to see some of the regalias and official costumes.

The Kew Gardens are a large park to which a small entrance fee is charged. They not only have wonderful flowers, but dozens of hot houses into which flowers from all over the world have been collected and are grown. All flowers are label- with their names and the countries from which they came.

There is also a museum containing samples of wood grown in every part of the world.

Before Walter Pratt left that night I arranged to leave with him at 9 o'clock the next morning for a visit to the Manchester district where I was to see machine shops and cotton mills.

(To be Continued)

R. L. Stowe in Hospital.

Belmont, N. C. — Following an acute attack of renal calculae, Saturday night, R. L. Stowe was removed to the Charlotte sanatorium on August 16th. His condition is improved, and it is expected he will be able to be at home in a few days.

J. H. Going Vivits Canada.

J. H. Going, overseer of carding and spinning at Fieldale, Va., paid us a visit this week. During the two weeks vacation which is given every summer by the mills at Fieldale. Mr. Going, accompanied by his family took an automobile trip to Canada,and came back through the Middle Western States.

$268,000,000 is Invested in Textile Plants in North Carolina.

Raleigh, N. C.—Capital invested in cotton manufacturing plants in North Carolina last year totalled $268,000,000 compared with $96,000,000 in 1910 and $33,000,000 in 1900, the State Department of Labor and Printing finds.

The value of the products of the cotton mills was eleven times that of 1900.

Can You Use Part of My Time?

Manufacturers' representative now traveling North and South Carolina textile territory is in position to take on side line on commission basis. Wide acquaintance among textile men in this section. Best of references; University graduate. If interested will be glad to arrange personal interview. Address P. A. S., care Southern Textile Bulletin.

Economy in Lubrication

(Continued from Page 14)

2. Reduce wear and replacement of machinery.
3. Reduce labor charges for oiler.
4. Reduce loss of production due to tie up of machinery and necessity of frequent lubrication.
5. Reduce maintenance charges.
6. Add materially to cleanliness of working conditions and products.
7. Reduce power cost.

—Black and White.

Cotton and Dyeing From a Chemist's Point of View

(Continued from Page 8)

to its chemical character, the presence of certain impurities, the absorption of particular irons, contact electrification, or membrane equilibrane (Speakman). This theory apparently explains how the dyestuff is attracted to the fibre, but fails to explain the fixation of the dyestuff unless either chemical combination or absorption may result as a consequence of difference in electrical condition. No. single theory appears to be capable of explaining all the known facts of dyeing.

Several interesting suggestions with regard to the effects of differently sized dyestuff particles and pores of fibres have been made. As a result of experiments in which cotton, flax and hemp were dyed with substantive colors, it has shown that the concentration of salt in the dyebath at which the amount of dye absorbed is a maximum, is different for each fibre. It has been assumed that at this concentration the number of dyestuff particles of the most favorable size is at a maximum, and that the pores of each fibre differ in size. The suggestion is that the most favorable conditions for dyeing are when the dye particles and the pores are of approximately the same diameter.

An explanation of differences in tone found in dyeing cotton in successive batches with a direct cotton dyestuff was recently made by Matthews.

(To be Continued)

Georgia Mill Men To Meet

Interest in technical phases of cotton manufacturing will center in the fall convention of the Textile Operating Executives of Georgia, which will be held at the Henry Grady Hotel, Atlanta, Ga., on Tuesday, September 13th. Robert W. Philip, secretary of the organization, announces that the meeting will assemble mill men from mills all over the State.

One general session, to begin in the hotel ball room at 9:30 o'clock Tuesday morning, will constitute the convention, together with minor committee and executive sessions. The technical subject of warp preparation, covering the processes involved in treating the yarn prior to weaving, will form the basis of the major portion of the meeting. Descriptions of installations of improved methods and systems for this work in various leading Georgia mills will be given, followed by general informal discussion.

In addition to this feature, a round-table discussion on slashing and weaving will be conducted.

Annual election of officers will be held at this meeting, it is announced. John S. Bachman, of Rome, Ga., is general chairman, and his successor will be named. Frank S. Dennis, manager and superintendent of the Consolidated Textile Corp., LaFayette, is vice general chairman. The governing board of the association is composed of an executive committee, which includes the followin gprominent Georgia mill executives: Frank L. Asbury, Jr., superintendent, Hillside Cotton Mills, LaGrange; R. J. Jennings, Lanett Mill, West Point; J. W. Hames, superintendent, Exposition Cotton Mills, Atlanta; Frank K. Petrea, superintendent, Swift Manufacturing Company, Columbus; and Frank B. Williams, superintendent, Fairfax Mill, West Point.

It is interesting to note that four of these officers are recent graduates of the Georgia School of Technology in textiles, now occupying important positions in the textile life of the State.

In attendance of mill men from Georgia, invitations will be extended to mill men in neighboring States, it is announced. J. M. Gregg, secretary of the Southern Textile Association and The Arkwrights, Inc., of Charlotte, N. C., and other prominent visitors, will be in attendance. A registration of approximately 150 delegates is anticipated.

Pacific Earnings Increase

Net earnings of Pacific Mills for the six months' period ended June 30, 1927, amounted to $709,066 compared to $227,594 for the corresponding period of 1926. The amount stated represents net profit after deducting all charges, including interest and the full amount for depreciation, but before deducting Federal taxes.

With approximately 395,000 shares of capital stock outstanding, the net earnings for the first half of 1927 (before deducting Federal taxes), are equivalent to about $1.79 per share.

With respect to the company's general financial position, there have been no bank borrowings during the year, the company still holds $2,500,000 of Government secprities, net quick assets have increased over $1,100,000 since the first of the present year, and the cash balance has been increased from $3,777,073,.04 at the beginning of 1927, to $4,595,908.49.

Current operations continue to be encouraging. The Lawrence, Mass., cotton department is operating at 100 per cent of single shift capacity on a loomage basis, the Lawrence worsted department, 56 per cent. The Lawrence print works is operating at 78 per cent of capacity (printing running full), and Lawrence as a whole, at 75 per cent.

The Dover, N. H., department is operating at 126 per cent of single shift capacity on a loomage basis; the Columbia, S. C., department at 127 per cent, and the Lyman, S. C., department, 128 per cent.

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Improving the Fastness to Kier Boiling of Vat Dyeing

(Continued from Page 12)

acetate to one of ferrous sulphate, and using the clear solution after allowing time for the sulphate of lead formed to settle.

Atmospheric oxidation of the ferrous acetate on the cotton takes place somewhat quickly by simple exposure to air, and after the soaping of the treated material, the yarn is dyed and left quite soft in handle.

That is one method of accomplishing the object. There are many others, and whichever one may be adopted, much depends upon the fastness of the resulting color. It may be granted that shades of iron buff are fast to the influence of alkalies under normal conditions, but no definite indication is available in a general way concerning their relative fastness to kier boiling. As a matter of fact, it was found that kier boiling under the most severe conditions possible was apt to cause a decrease in the intensity of the color, due more probably to the exertion of mechanical friction during boiling under pressure rather than any chemical action. This observation suggested that the iron oxide precipitated in the cotton was not sufficiently associated intimately with the cotton to which it had been applied. A great improvement in this respect was realized by dyeing the cotton iron buff, by impregnating it for half an hour with a strong solution of ferrous ammonium sulphate, squeezing and causing the fixation of the oxide by treating with a boiling solution of soda followed by washing. This method was found to give the clearest shade on bleached cotton, and to be very resistant to alkali, as well as kier boiling.

Having established the means of producing the fastest shades of iron buff to kier boiling, attention was then turned to applying the method as a topping on indanthrene dyeings.

Indanthrene yellow G has been classified officially by the German Fastness Commission as not fast to kier boiling. This coloring matter was, therefore, chosen for a test. Cotton yarn was dyed with Indanthrene yellow G, strictly by the method prescribed by the makers, soaped at the boil, and washed. The cotton so dyed, was then impregnated with a strong solution of ferrous ammonium sulphate, squeezed, and treated with soda at the boil. The shade of the ground color became altered by the topping only to the extent of being a very little darker and slightly duller.

Portions of the self-dyeing and the topped dyeing were tested comparatively along with portions of bleached cotton for fastness to boiling caustic soda solution. Under the test submitted to, the self-dyeing became much reduced, and the accompanying white cotton appreciably stained, whereas the topped dyeing did not become reduced, and the accompanying white cotton remained quite white. This result, although surprising, raised doubts as to the real practical value of the test of fastness to kier boiling prescribed by the Fastness Commission, and it was preferred to rely instead on the more severe test of boiling under pressure with caustic soda.

Both failed to survive this test, yet again the topped dyeing was much superior in fastness to the self dyeing. The experimental work had served to show, however, that an after treatment with oxide of iron is of some service in bringing about increased fastness of indanthrene dyeings. Similar results were obtained with other members of the indanthrene series, and were much more pronounced in the case of Indanthrene Violet B. N., a member which is known to be not fast to kier boiling. In this instance, the after treatment with oxide of iron, makes the dyeing fairly satisfactorily fast to that test where the non-treated fails. It has been generally accepted that the presence of oxide of iron in cotton is liable to cause tendering of the cotton when submitted to a course of bleaching with hypochlorites, the iron exercising a catalytic action and inducing the formation of oxycellulose. In face of this general belief it became advisable to determine the action in this respect of the oxide of iron precipitated on indanthrene dyed cotton.

Comparative tests were therefore made by treating self dyeing and a topped dyeing, along with a portion of the same yarn, but boiled out only in bleaching liquor 1½ degrees Twaddel, until the grey yarn became full bleached, then washing, soaping and driving.

Tests of strength showed that the topped dyeing had lost no more than the bleached yarn itself. — Textile Recorder of Manchester, Eng.

"Paper vs. Cotton

It seems rather strange that there has not been a more determined effore on the part of cotton manufacturers and merchants to meet the increasing competition of paper towels and napkins. Sales of these paper goods are displacing increasing quantities of cotton goods every year, and producers of the latter act as though it were hopeless to attempt to compete.

If we thought, as most members of the trade appear to do, that it is simply a question of price as between cotton towels and napkins of existing character and their paper substitutes, we might believe as they do, but we won't.

When we use paper towels we use anywhere from three to six to perform work for which one end of an ordinary cotton towel is sufficient; and we draw the line at using paper towels for face drying. The number of paper napkins required to do the work of a small portion of a cotton napkin is much the same.

The paper towels and napkins when used are thrown away. The cotton towels and napkins when used, even though in very small part, go to the laundry. And there is the nub of the whole proposition: The enormous cost of laundering as compared with the initial cost of the launderee.

Now, here is the merchandising proposition as we see it, to meet competition of paper and eliminate the cost of laundering: Decide upon the size of a single-use towel or napkin; produce something of that size that can be sold packages of a dozen or more at a price for each that is approximately the cost of laundering a full size towel or napkin, and mark them 'Hygienic and Non-Washable," or with any other slogan that will get the idea across.

But it costs equally as much for the laundering of handkerchiefs and more for the laundering of soft collars. You can buy a very satisfactory cotton handkerchief at the "Five and Ten" for five cents, but nobody seems to have thought of the idea of putting these up in packages of a dozen and selling them for fifty cents with the admonition to throw them away after using.

It costs anywhere from two and a half to five cents to get a soft collar laundered, and if someone would attack the problem as did Van Heusen it should not be impossible to produce a soft collar to sell at fifty cents per dozen that would look just as well and wear just as well for one day as any of the soft collars now on the market.

The processing that we have roughly in mind is a combination of die stamping, or cutting out of the fabric, and the pressing or moulding of the collar into shape while impregnated with the starch or other finishing compound; the operations being continuous—an adaptation of the process once used for making the old-fashioned, crude paper and celluloid collars.

"It has been pointed out by more than one economist that the keenest of present day competition is not within industries, but between industries, and here are specific illustrations showing how the cotton industry may aid in the elimination of unnecessary waste of labor and capital and at the same time increase in an important manner the demand for its products.—Textile World.

National Association Year Book

Boston, Mass.—The Year Book of The National Association of Cotton Manufacturers, used by textile manufacturers throughout the world and regarded as one of the most authoritative and helpful sources of information on the industry, proves even more valuable in the tenth of the series now available. The 1927 edition received from the printers today is the most complete statistical manual that has been published by the Association.

It presents in a concise, condensed form a summary of practically all of the reliable figures that would be of use to a cotton manufacturer. For those seeking specific information it is a guide through the huge quantities of data collected by many governmental departments in this country and abroad and by private concerns.

Much new material has been added throughout. In the Statistical Section the new tables include one giving production, shipments, sales, stocks and orders of certain standard cloths by quarters for 1926. This is the first time that data of this sort has been available. In the Technical Section is given the construction of many of these standard fabrics.

Rayon's place in the industry is indicated by the statistics given on the production, exports, imports and consumption of rayon yarn in 1926. Other new material added to the statistical section includes the expansion of the table giving the range of staple of various cottons; mid-season stocks of all cotton in the world; number of active ring and mule spindles in the United States for selected years; quantity of the several kinds of raw cotton consumed and of stocks held in consuming establishments; and imports for consumption of countable cotton cloths.

Chemical method of identifying the different rayons is one of the many features in the Technical section which has been radically revised since last year. The new material also includes a list of all of the Federal Specifications Board specifications for coton materials; a list of the widths on which some of the standard fabrics are quoted; range of card settings; range of production of roving frames, ring filling, warp and hosiery yarns; revised table for numbering roving; revised general specifications for testing materials published by the Federal Specifications Board, two new breaking strength tables giving the approximate strength of carded and combed yarns from different staples.

Primarily the book is for the use of members of the association but can be obtained by persons outside of the organization who have need for it. Both the president, William B. MacColl and the secretary, Russell T. Fisher point out that criticisms of the method of presenting the material or suggestions on data that might be included will add materially to the value of future editions.

Shuttleless Loom Attracts Interest.

New Bedford, Mass.—A shutteless loom, of American origin, has appeared in public demonstration here and is exciting much comment in textile circles. The loom, invention of John C. Brooks, Paterson, N. J., the only man in the world holding a basic weaving patent, uses air currents in driving the left thread through the warp shed, metal air nozzles through which the filling yarn runs succeeding the flying shuttle.

Important textile machinery interests are reported investigating the machine's possibilities. In its present state, it is a practical weaving device in the manufacture of fabrics in which the selvedge is unimportant.

Spindle Plant to Rebuild.

Greenville, S. C.—A plant with complete new equipment will be set up for the Greenville Spindle & Flyer Co., as soon as the insurance on the old plant and equipment, which was destroyed by fire several nights ago at Camp Sevier, is settled, according to Edward G. Andrews, owner.

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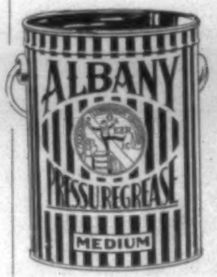

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Dyehouse Slavery

(Continued from Page 10)

tain needed requirements—and it meets them more effectively than human operations ever can.

The dyer who insists upon hand-dyeing, or who insists upon employing antiquated machinery is deliberately increasing the cost of his employer's products and is just as deliberately producing inferior results.

Junking their present machinery is the most profitable thing some mills can do. Extracting a decayed tooth is the proper remedy for a toothache.

Many a dyer who thinks it a good deal to trade in his two-year-old automobile for a new one, is so weak minded that he cannot calculate the advantage of trading in his ten-year-old dyeing machinery.

The advantages of modern machinery over an old plant is capable of arithmetical calculation, and the machine manufacturers will do the figuring for you.

The valuable dyer is the one who thinks in terms of cost and quality.

A dyer should keep posted regarding new machines, should communicate constantly with their manufacturers, should determine the actual saving incident to their installation, should clearly formulate the advantages of their adoption and then lay the matter forcily and intelligently before his employer.

And this applies equally to the finisher, bleacher and printer.

There is not a mill man in the country who will not invest money in his plant if he can be shown a reasonable return thereon.

Many mills overloaded themselves with machinery — some good and some bad—during the war and it has required considerable bravery to discard it for improved and more efficient devices—but figures control in business, and many of the mills have changed themselves from a losing business into a profitable one by mechanical effectiveness.

A dyer will never get anywhere if he tells his employer he thinks they should have some new equipment, but if he states that they must have it, and proves his assertions by figures, he can convince his employer of the necessity—and incidentally raise himself in the estimation of his employer.

Communicate with the machinery manufacturers, tell them of your requirements, ask them for practical suggestions, get their estimates on costs of new plants and savings to be accomplished—and then have a heart-to-heart talk with the boss.

Do not be an old fogey working in a foggy dyehouse. Be proud of your dyehouse and you will be proud of yourself and so will the boss.—Textile Colorist.

Output of Hosiery in June Gains

Washington, D. C.—Production of hosiery in June was considerably larger than in the same month last year, and shipments, new orders, and unfilled orders at the end of the month also increased, according to a comparative summary of reports from 258 identical establishments, representing 323 mills announced the Census Bureau.

Reports from 279 identical establishments, represent 345 mills, show June production ahead of that of May, this year, and also increases in shipments, orders booked and unfillled orders at the end of the month, with a decrease in cancellations.

Production of all classes of hosiery in June aggregated 4,758,000 dozen pairs, contrasted with 4,530,000 in May. Net shipments were 4,746,000 dozen pairs, compared with 4,371,000; stocks on hand at the end of the month were 10,611,000, compared to 10,557,000; orders booked during the month were 5,049,000, contrasted with 4,966,000 in May; cancellations in June were 131,000, compared with 159,000 in the preceding month, and unfilled orders at the end of June were 7,271,000 dozen pairs, compared with 7,036,000 at the end of May.

New Finish for Crashes

LaGrange, Ga.—One of the finishing plants in this section is using the following method on crash where a rough finish is required. A very light starch liquor is used, to one gallon of water, two to six ounces of potato starch, one-half to one pound cocoanut oil. Mixed in cold water, and boiled together for 30 minutes. The pieces are passed through a starch mangle at full width, over a drying machine of steam cylinders. Then they are passed through a light calender. The goods are bleached sometimes, each piece being placed separately in a kier with a four-degree TW solution of caustic soda and boiled six to eight hours.

The goods are then run through a washing machine and returned to the kier and the soda boil repeated for eight hours. The goods are run through another washing machine and through a solution of oil of vitroil ½ degree TW, washed again, and then washed again until all trace of acid has been removed. If any acid is left in the goods, the goods being very heavy, will be tender, as they will retain so much acid when dried on the drying machine that they have the fiber of the cloth injured.

The goods with this finish will stand a great amount of wear, and yet look dressy, without being too expensive.

Cotton Sales Show Europe's Progress

Washington, D. C.—Improved economic conditions in Europe, especially in Germany, and the relatively low prices early in the season resulting from the large American crops were responsible to a great extent for the 40 per cent increase registered in our exports of raw cotton during the fiscal year ended June 30 last, according to officials of the Bureau of Agricultural Economics. Total shipments for the fiscal year less re-exports were 10,902,648 bales, against 7,782,848 bales in the preceding year.

For the first time in the history of the cotton industry, exports to Ger-

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many were larger than to any other country, amounting to 2,829,000 bales. an increase of 70.7 per cent over the fiscal year 1926, this increase reflecting to some extent the large re-export business done by Germany with other Central European countries.

All other users of American cotton increased their purchases during the year. Exports to Great Britain, usually the leading customer, increased by 15 per cent, to 2,622,766 bales. Lancashire, however, was not so favorably placed as was Germany to take full advantage of the price situation owing to the unfavorable conditions existing in the domestic economic situation and in the Oriental finished goods markets.

Cotton exports to Russia increased by 105 per cent over 1926, to 485,047 bales. Other European countries showed smaller gains, but the total exports to Europe were 17.9 per cent above 1926, at 8,813,454 bales.

In the Orient, both China and Japan made significant increases in their takings of American cotton, exports to the former increasing 147 per cent, to 262,205 bales, and the latter 47 per cent, to 1,644,250 bales, making Japan the third heaviest purchaser of cotton, in spite of unsettled economic conditions existing in both countries, particularly in China.

Glanzstoff Plant For Tenn. Assured

Beveridge C. Dunlop, vice-president of the American Glanzstoff Corporation, is in Tennessee to discuss with Dr. Arthur Mothwurf, president of the company, at Johnson City, the final details prior to the beginning of construction of the company's new rayon plant near Elizabethton.

According to Mr. Dunlop, he has been advised that all differences over the building of the Johnson Cit-Glanzstoff highway by the Carter county have been settled, and that the company is ready to proceed with the ground breaking preparatory to the construction of the works, which will have a capacity of 4,500,000 pounds of viscose yarn annually.

British Exports of Textile Machines Up

British exports of textile machinery during the first six months of 1927 show an expansion of 6,453 tons over the corresponding period of 1926, shipments having risen from 50,780 tons valued at £4,926,066 to 57,233 tons at £5,609,306, U. S. Department of Commerce reports.

Increase in exports was due to larger shipments to Russia, which took 6,828 tons, valued £631,383, against 3,935, at £312,517, in 1926. Japan, China, United States, Canada, British East Indies and Netherlands also increased their imports from Britain. Exports to France and South America decreased. Most of the larger exports were of machinery for spinning and twisting.

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Philadelphia office: Drexel Building New England office: Middleton, Conn.
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Cotton Yarns, Combed Peeler, Carded Singles and Ply, Audrey Spinning Co. Weldon, N. C., Mandeville Mills, Carrollton, Ga., Mills Mill, No. 2, Woodruff, S. C., Wabena Mills, Lexington, N. C., White Hall Yarn Mills, White Hall, Ga.
Grey Goods, Print Cloths, Twills, Sheetings, Pajama Checks, Arcadia Mills, Spartanburg, S. C., Clinton Cotton Mills, Clinton, S. C., Hermitage Cotton Mills, Camden, S. C., Mills Mill, Greenville, S. C., Osage Mfg. Co., Bessemer City .N. C.

Cotton Goods

New York.—As the result of the advance in the price of cotton, cotton goods merchants are moving prices upward very generally on finished lines. Brown and bleached cottons are moving more freely for delivery in the next few weeks. Several agents are still unwilling to sell for delivery in the last quarter of the year on current price levels. There are still many lines withdrawn, awaiting price action to be determined after more is known as to what buyers care to do.

While some of the larger operators are now firmly convinced that the cotton markets are going to rule high there are still a great many who appear indifferent and will not discount future probabilities by ordering ahead.

Parker, Wilder & Co., have advanced Pequot A 4-4 brown heavy sheetings, one-half cent per yard; Pequot B 40-inch, brown heavy sheeting 1 cent; Pequot B 4-4 bleached heavy sheetings, one-half cent; Eldorado 4-4 brown sheetings, one-half cent.

Cannon Mills have advanced towels from 5 to 10 per cent, depending upon the grade. They are booking business to March.

Cone Export & Commission Co., has advanced prices on the line of Haynes Turkish towels.

Catlin & Co., have advanced their Highland and Florence flannels 1 cent a yard.

The percale and flannel department of Pacific Mills have advanced its 36-inch Eiderdown, 36-inch Melrae and 36-inch Resta flannels 1 cent a yard.

The Pepperell Department of Bliss, Fabyan & Co., have advanced Pepperell Canton flannels one-half cent a yard.

Lady Pepperell tubings have been advanced 1 cent a yard by the Pepperell Department of Bliss, Fabyan & Co.

Hunter Mfg. & Commission Co., have advanced prices on their lines of towels, varying from 5 to 10 per cent according to different numbers. They state that their mills are sold ahead to October, and that business is being accepted at the new basis for delivery from October on.

Wellington, Sears & Co., effective early this week, advanced Fairfax towels and towelings about 5 to 10 per cent, for delivery through the rest of the year.

Only spot and nearby delivery business is being accepted on towels by T. Holt Haywood Dept., on the basis of prices which were revised upward about 10 days ago. At that time, advances of about 5 per cent were put into effect on low-end and special numbers.

Later in the week it was said that while the edge was off the sharp tendency upward, new print cloth prices were fairly firm and the only concessions heard of were on sales of 20,000 to 30,000-yard lots of spots traded in 1/8c down from the top quotations.

It was said that a few lots of sheetings for the bag trades were purchased at prices slightly under those current, but available lots are being held pretty firm as a rule. On 2.50-yard goods some mills quoted as high as 13c to 12¾c, but it was said a few might still be found at 12½c. For 4.25s mills are asking 8¾c with possibilities still of ⅛c better. Most houses now want a minimum of 9c for 4-yard 37-inch bag goods.

Popular numbers of sateens have stiffened and it is reported that a larger movement in some of the finished goods for lining purposes is stimulating inquiries for the gray cloths.

Southern mills have sold sizable quantities of plain rayons at 15½c for 64x44 foreign rayon content goods, and 16½c for 64x48s. Business has also been placed on fancies and dobbies. Some mills now are so well sold that they cannot take on additional deliveries until October.

Many prices have been named on tire fabrics, indicating what is likely to be considered when buyers are ready to talk of further contracts. The business being done is light in volume and consists largely of meeting each small order as it comes in without regard to what may be done when more is known of the staple cotton situation.

Current quotations on cotton duck are designed to give salesmen some idea of what mills will do on contracts. The business being done consists largely of selling stock goods on a trading basis, considerably up from quotations of a week ago but still under contract price suggestions. More business has been coming forward in the past two days on odd lots.

It is constantly urged that production is too high in relation to current distributing and consuming conditions, but the trade does not look for any material change in the volume of output until cheap stocks of cotton are thoroughly exhausted in mill centers and necessity begins to force mills to assume the risk of piling up goods to await demand. Until the time arrives when mills will require money to buy high priced cotton it is not believed in the trade that mill agents will have much to say concerning long term production plans.

Quotations on cotton goods prices were as follows:

Print cloths, 28-in., 64x64s	6⅜
Print cloths, 28-in., 64x60s	6⅛
Print cloths, 27-in., 64x60s	6
Gray g'ds, 38½-in., 64x64s	8¾
Gray goods, 39-in., 68x72s	9⅜
Gray goods, 39-in., 80x80s	10¾
Brown shetings, 3-yard	11½
Brown sh'tgs., 4-yard, 56x60	10¼
Brown sheetings, stand	12½
Tickings, 8-oz.	19½a21
Denims	16
Staple ginghams, 27-in	9½
Kid finished cambrics	8 a 9
Dress ginghams	14⅝a16½
Standard prints	8

The Yarn Market

Philadelphia, Pa.—During the past week there was a distinct revival of buyers' interest in cotton yarns. Part of it for pricing purposes, alone, but some business is also being placed. Knitters are more active buyers than weavers. The latter are said to have stocks of made-up goods ahead of them. These stocks are understood to be moderate in size. On the other hand, the rise in cotton prices has not yet been reflected in sales of cotton goods made in this market. In fact, some goods are reported as offered at lower prices this week than last. Dry goods jobbers are doing more business in domestics this week than last and merchandise of this kind gives promise of ready clearance. Other types of cotton goods have not yet reflected the changed status of the cotton crop outlook.

It is said that a few orders have come in from knitters for 100,000 pounds, or about twice the size of the largest order placed by any of the local weaving mills this week. Yarn rates prevailing for this business are said to be a half to a cent below the quotations published herewith. The orders are being taken by spinners who wish to book up some open time they have this month or next and spin up what is left of their low-priced cotton.

Yarn dealers are being told by their customers that it is going to be difficult to get cotton goods prices up enough to warrant confident yarn purchases at this level. In spite of this feeling of conservatism, yarn men point out that stocks of yarn are moderate in nearly all quarters, that practically all textiles will enjoy a good movement this fall and that it remains to be seen whether enough cotton will be raised to meet requirements.

Combed yarn spinners continue reluctant to name prices but the counts up to and including 50s two-ply are up 2 to 3 cents, the finer numbers remaining unchanged. In both carded and combed, the counts closest to cotton are the ones most affected, thus far, by the sharp advance earlier this week in cotton prices. As far as combed yarns are concerned, at the moment, they seem more responsive to the advance announced by the mercerizers, ranging from 2 to 6 cents a pound and affecting all numbers from 20s two-ply to 80s two-ply, than to the changed status of staple cotton.

Southern Two-ply Skeins.

8s	30½
10s	32
12s	32½
14s	33
16s	34
20s	35
26s	39
30s	41
40s	49½

Southern Two-ply Warps.

8s	31½
10s	32½
12s	33½
14s	34½
16s	35
18s	35½
20s	36
24s	38
26s	39
30s	41
40s	50

Southern Frame Spun Carded Yarn on Cones—Cotton Hosiery

8s	30½
10s	31½
12s	32
14s	32½
16s	33
18s	33½
20s	34
22s	35
24s	36
26s	37
30s	39
40s	48

Southern Single Skeins.

4s-8s	30
10s	31
12s	31½
14s	32
16s	33
18s	34
20s	35½
22s	36
24s	37
30s	38
40s	40

Southern Single Warps.

4s-8s	30
10s	32
12s	32½
16s	34
18s	35
20s	36
24s	39½
30s	40½
40s	50

Firm Market for Mill Stocks

While August is always a dull month for trading in Southern cotton mill stocks the market continues firm with prices in some stocks advancing gradually. There has been no let-up in the demand for good preferred stocks, says A. M. Law & Co., of Spartanburg.

Bibb Manufacturing Company continues to be one of the more active common stocks though the market is not as strong as it was a few weeks ago. The advance in this issue occurred too rapidly and was certain to bring out considerable profit-taking. It is understood that Dunean Mills will make an excellent showing this year and the common stock on which no dividends are being paid is up five points quoted at 101 bid. The preferred has also advanced with bids at 97. Victor-Monaghan common has been rather active with sales occurring at 104.

Among the preferred issues, Orr preferred is selling at the highest price which the stock has ever brought, that is 102, though its callable price is par. Union-Buffalo first preferred has gained another point, quoted at 94 bid.

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Information Wanted

The present address of Miss Evelyne Bramlett, who in May, 1925, lived in Charlotte, N. C., and worked in one of the mills in the city, is desired by R. D. Hicks of the Inman Telephone Exchange, Inman, S. C. If Miss Bramlett or her friends will kindly give us this information, will be greatly appreciated and will pay for same if desired.

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WANT position as agent, superintendent or manager, anywhere. No. 5207.

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WANT position as superintendent, or as overseer weaving in a large mill. Best of references. No. 5209.

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  - Pioneer Broom Co.
- **Bushings (Bronze)—**
  - Moccasin Bushing Co.
- **Calenders—**
  - H. W. Butterworth & Sons Co.
  - B. F. Perkins & Son, Inc.
  - Textile Finishing Machinery Co.
- **Calender Roll Grinders—**
  - B. S. Roy & Son Co.
- **Cards—**
  - Saco-Lowell Shops
  - Whitin Machine Works
  - Woonsocket Machine & Press Co., Inc.
- **Card Clothing—**
  - Ashworth Bros.
  - Charlotte Mfg. Co.
  - Howard Bros. Mfg. Co.
  - Wickwire Spencer Steel Co.
- **Card Grinding Machinery—**
  - Dronsfield Bros.
  - Easton & Burnham Machine Co.
  - T. C. Entwistle Co.
  - Roy, B. S. & Son Co.
  - Saco-Lowell Shops
  - Whitin Machine Works
  - Woonsocket Machine & Press Co., Inc.
- **Card Stripper—**
  - Abington Tetxile Machinery Works
- **Carrier Aprons—**
  - Link-Belt Co.
  - Wickwire Spencer Steel Co.
- **Caustic Potash—**
- **Castings (Brass and Bronze)—**
  - Moccasin Bushing Co.
- **Caustic Soda—**
  - Arnold, Hoffman & Co., Inc.
  - Mathieson Alkali Works, Inc.
- **Chain Belts and Drives—**
  - Charles Bond Company
  - Link-Belt Co.
  - Morse Chain Co.
  - The Whitney Manufacturing Co.
- **Chemicals—**
  - J. B. Ford Co.
  - Hart Products Corp.
  - Mathieson Alkali Works, Inc.
  - Seydel Chemical Co.
  - Seydel-Woolley Co.
  - L. Sonneborn Sons, Inc.
  - United Chemical Products Corporation.
  - Jacques Wolf & Co.
- **Cleaning Agents—**
  - The Arabol Manufacturing Co.
  - E. F. Houghton & Co.
  - Oakite Products, Inc.
  - Jacques Wolf & Co.
- **Cloth Presses—**
  - Economy Baler Co.
- **Clutches (Friction)—**
  - Charles Bond Company
  - Textile Finishing Machinery Co.
- **Cloth Winders and Doublers—**
  - Curtis & Marble Machine Co.
- **Coal Handling Machinery—**
  - Link-Belt Co.
- **Combs—**
  - Steel Heddle Mfg. Co.
- **Combs (Beamers, Warpers, Slashers)—**
  - Easton & Burnham Machine Co.
  - T. C. Entwistle Co.
- **Commission Merchants—**
  - Catlin & Co.
  - The Farish Co.
  - J. H. Lane & Co.
  - Mauney Steel Co.
  - Ridley, Watts & Co.
- **Compressors (Air)—**
  - Allis-Chalmers Mfg. Co.
- **Condensers—**
  - Allis-Chalmers Mfg. Co.
- **Conditioning Machines—**
  - American Moistening Co.
- **Cones (Paper)—**
  - Sonoco Products Co.
- **Cone Vice Couplings—**
  - William Sellers & Co., Inc.
  - Cutler-Hammer Mfg. Co.
- **Controllers, Electric—**
  - Cocker Machine & Foundry Co.
- **Conveying Systems—**
  - Link-Belt Co.
- **Coolers (Air)—**
  - ——See Humidifying Apparatus.
- **Cotton—**
  - Lesser-Goldman Cotton Co.
  - Newburger Cotton Co.
  - Wm. & York Wilson.
- **Cotton Machinery—**
  - Ashworth Bros.
  - Barber-Colman Co.
  - Collins Bros. Machine Co.
  - Crompton & Knowles Loom Works
  - Dixon Lubricating Saddle Co.
  - Draper Corporation
  - T. C. Entwistle Co.
  - Fales & Jenks Machine Co.
  - Foster Machine Co.
  - H. & B. American Machine Co.
  - Rodney Hunt Machine Co.
  - National Ring Traveler Co.
  - Roy, B. S. & Son
  - Saco-Lowell Shops
  - Southern Spindle & Flyer Co.
  - Stafford Co., The
  - Terrell Machine Co.
  - Tolhurst Machine Works
  - Universal Winding Co.
  - Whitin Machine Works
  - Whitinsville Spinning Ring Co.
  - Woonsocket Machine & Press Co., Inc.
- **Cotton Openers and Lappers—**
  - Saco-Lowell Shops
  - Whitin Machine Works
  - Woonsocket Machine & Press Co., Inc.
- **Cotton Softeners—**
  - Arabol Mfg. Co.
  - Arnold, Hoffman & Co., Inc.
  - Borne, Scrymser Co.
  - Bosson & Lane
  - Hart Products Corp.
  - E. F. Houghton & Co.
  - Oakite Products, Inc.
  - Seydel-Woolley Co.
  - L. Sonneborn Sons, Inc.
  - United Chemical Products Corporation.
  - Wolf, Jacques & Co.
- **Cotton Waste Machinery—**
  - Saco-Lowell Shops
  - Whitin Machine Works
  - Woonsocket Machine & Press Co., Inc.
- **Couplings (Shaft)—**
  - Charles Bond Company
  - William Sellers & Co., Inc.
- **Cranes—**
  - Link-Belt Co.
- **Dobby Chain—**
  - Crompton & Knowles Loom Works
  - Rice Dobby Chain Co.
- **Doffing Boxes—**
  - Diamond State Fibre Company
  - Rogers Fibre Co.
- **Doublers—**
  - Saco-Lowell Shops
  - Textile Finishing Machinery Co.
  - Universal Winding Co.
- **Doublers (Yarn)—**
  - Foster Machine Co.
- **Drives (Silent Chain)—**
  - Charles Bond Company
  - Link-Belt Co.
  - Morse Chain Co.
- **Drop Wires—**
  - Crompton & Knowles Loom Works
  - Draper Corporation
  - R. I. Warp Stop Equipment Co.
- **Dryers (Centrifugal)—**
  - Roy, B. S. & Son Co.
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- **Dyeing, Drying, Bleaching and Finishing Machinery—**
  - H. W. Butterworth & Sons Co.
  - Cocker Machine & Foundry Co.
  - Franklin Process Co.
  - Perkins, B. F. & Sons, Inc.
  - Rodney Hunt Machine Co.
  - Textile Finishing Machinery Co.
- **Dyestuffs and Chemicals—**
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  - Bosson & Lane
  - E. I. du Pont de Nemours & Co., Inc.
  - General Dyestuff Corporation.
  - National Aniline & Chemical Co.
  - Newport Chemical Works
  - Chas. H. Stone
  - United Chemical Products Corp.
  - Wolf, Jacques & Co.
- **Dye Works—**
  - Franklin Process Co.
- **Electric Fans—**
  - Allis-Chalmers Mfg. Co.
  - General Electric Co.
  - Wetinghouse Electric & Mfg. Co.
- **Electric Hoists—**
  - Allis-Chalmers Mfg. Co.
  - Link-Belt Co.
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  - General Electric Co.
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  - Page Fence and Wire Products Assn
  - Wickwire Spencer Steel Co.
  - Spauling Fibre Co.
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  - Diamond State Fibre Company
- **Fibre Boxes—**
  - Diamond State Fibre Company
  - Spauling Fibre Co.
- **Fibre Specialties—**
  - Diamond State Fibre Co.
  - Rogers Fibre Co.
  - Spaulding Fibre Co.
- **Finishing Compounds—**
  - The Arabol Manufacturing Co.
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  - Hart Products Corp.
  - Seydel Chemical Company
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  - L. Sonneborn Sons Co.
  - United Chemical Products Corp.
  - Jacques Wolf & Co.
- **Finishing Machinery—**
  - ——See Dyeing, Drying, Bleaching and Finishing
- **Flat Wall Paint—**
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  - Woonsocket Machine & Press Co., Inc.
  - Whitin Machine Works
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  - Saco-Lowell Shops
  - Southern Spindle & Flyer Co.
  - Whitin Machine Works
  - Woonsocket Machine & Press Co., Inc.
- **Flyers—**
  - Saco-Lowell Shops
  - Southern Spindle & Flyer Co.
  - Whitin Machine Works
- **Frames—**
  - Steel Heddle Mfg. Co.
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  - ——See Clutches
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  - Ferguson Gear Co.
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  - Diamond State Fibre Company
  - Ferguson Gear Co.
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  - Thomas Grate Bar Co.
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  - Borne, Scrymser Co.
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  - Jacques Wolf & Co.
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  - Fales & Jenks Machine Co.
  - Rodney Hunt Machine Co.
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- **Roving Cans and Boxes—**
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  - Woonsocket Machine & Press Co., Inc.
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  - ——See Drinking Fountains.
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  - Hart Products Corp.
  - L. Sonneborn Sons, Inc.
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  - United Chemical Products Corporation
  - Jacques Wolf & Co.
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  - Arnold, Hoffman & Co., Inc.
  - Bosson & Lane
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  - Drake Corp.
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  - E. F. Houghton & Co.
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  - Seydel-Woolley Co.
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  - Charles B. Johnson.
  - Saco-Lowell Shops.
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  - Easton & Burnham Machine Co.
  - T. C. Entwistle Co.
  - Steel Heddle Mfg. Co.
  - Textile Finishing Machinery Co.
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  - L. Sonneborn Sons Co.
  - United Chemical Products Corp.
  - Wolf, Jacques & Co.
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  - L. Sonneborn Sons Co.
  - United Chemical Products Corp.
  - Jacques Wolf & Co.
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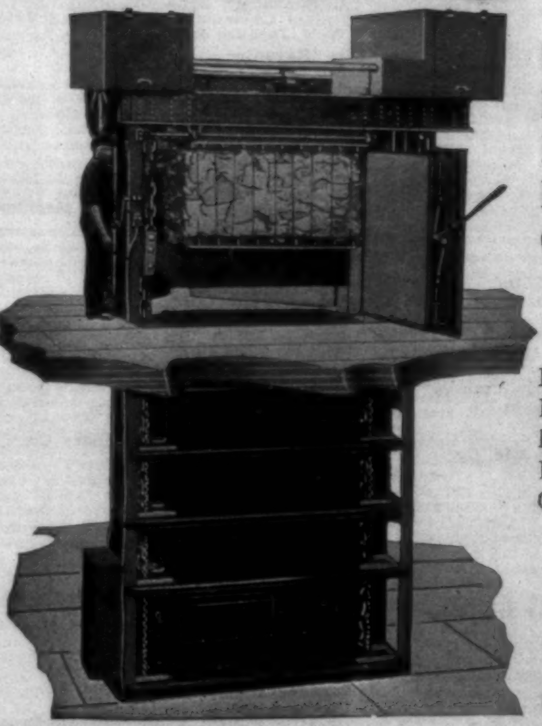

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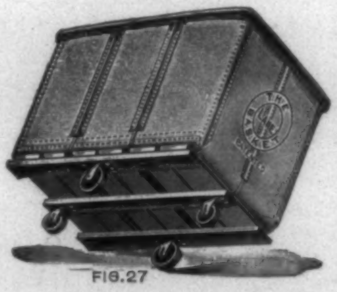

FIG.27

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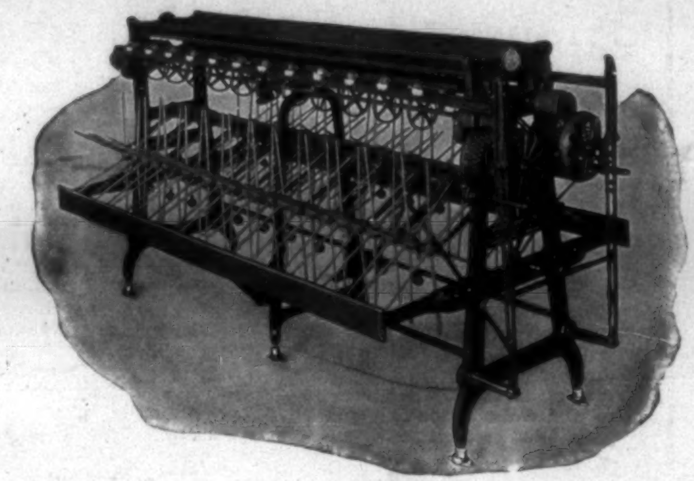

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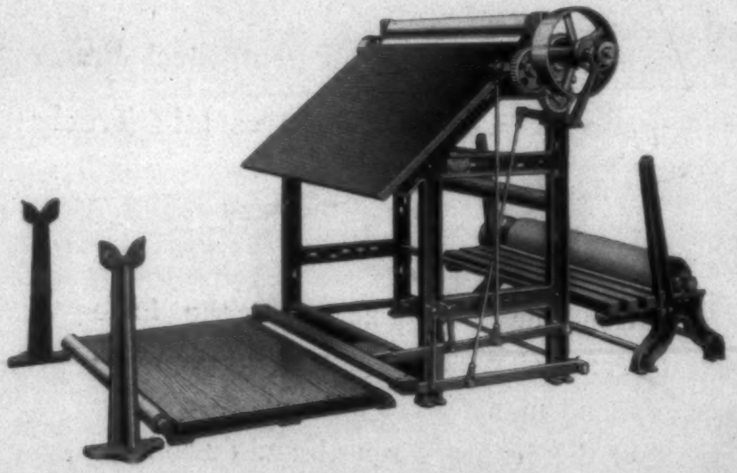

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